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NORTHERN INDIAN MUSIC

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THE METAPHYSICAL THEORY OF SOUND AND ITS APPLICATION TO LANGUAGE
AND MUSIC

NORTHERN INDIAN MUSIC

Volume One

THEORY & TECHNIQUE

ALAIN DANIÉLOU

(*Śhiva Śharan*)



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श्रीः

प्रणम्य शिरसा देवौ सरस्तिविमायकी ।
विचिन्त्य मणसा विष्णुं कर्त्तव्यं कर्तुमारभे ॥

“I bow my head to Sarasvatī, Goddess of Learning, who is the flow of Speech, and to Gaṇeśhā, the Guide, Lord of Number. Meditating upon the All-pervading, Viṣhnu, I begin my work.”

F O R E W O R D

IN attempting to solve the problems that arise in interpreting Sanskrit works on music, I have been led to follow the traditional Hindu version of ancient Indian history, for this alone makes possible a satisfactory classification of the numerous Sanskrit treatises; also it explains particularities which cannot be accounted for if we follow the usual modern theory and dates. Some of the views presented here may, therefore, appear to contradict what is generally held nowadays as historical fact. But it should be remembered that these views are not simply my own. While dealing with the traditional Hindu musical system, we shall also consider its history as it is traditionally understood.

The small numerals after quotations refer to the Sanskrit sources given in Appendix Two.

A. D.

CONTENTS

	Page
Foreword	7

PART ONE: THEORY

CHAPTER I

The Theory

Origins	15
The Antiquity of Indian Music	19
The Sanskrit Writers on Music	22
Northern and Southern Music	33

CHAPTER II

The Nature of Sound

The Nature of Sound	36
Intelligible Sound (Nādā)	36
The Different Kinds of Musical Sound	37
Sacred and Secular Music	38

CHAPTER III

The Scale

The Tonic or Drone	40
The Seven Svarās (Notes)	41
The Intercalary Notes, Kākali Nī and Antarā Ga	44
The Śrutis (Intervals)	45
The Measure of the Śrutis	46
The Notation of the Śrutis	49
The Sixty-six Śrutis	50
The Expression of the Śrutis	56
The Scale of the Śrutis	58
The Theory of the Classes of Intervals (Śruti-jātis)	61
The Scale	69
The Three Basic Scales (Grāmās)	72
Flats and Sharps	74
The Three Main Octaves (Saptakās)	75

CONTENTS

PART TWO: TECHNIQUE

CHAPTER IV

Notation

The Elements of Music	79
Notation of the Intervals (the Śrūtis):	
I. In Staff Notation	80
II. In the Indian Syllabic Notation	80
General Notation I (Staff Notation)	80
General Notation II (Indian Syllabic—Sol-fa—Notation)	82
Division of Mātrās	84
Tempos (Layā)	86

CHAPTER V

Rhythm

Rhythm (Tālā)	88
The Main Rhythms (Tālās)	89
Syncopation	97

CHAPTER VI

Melodic Development

Varnā (Melodic Movement)	99
Tānās (Melodic Figures)	99
Mūrch'hanās (Modal Scales)	101
Alamkārā (Ornamental Vocalization)	102
Grace (Gamakā)	104
Grahā, Amshā, Nyāsā	111

PART THREE: THE DEFINITION OF THE RĀGĀS

CHAPTER VII

The Rāgās

Rāgās or Modes	115
Moods, Colours and Notes	116
The Description of Rāgās in Verses and Pictures	117
The Four Phases in the Development of a Rāgā	117
Styles of Singing or Playing	118
A. Styles of Singing	118
B. Styles of Playing (on stringed instruments)	119

CONTENTS

CHAPTER VIII

Definition of the Rāgās

<i>The Fifteen Elements in the Definition of a Rāgā</i>	121
The Tuning of the Instruments (1)	121
Class (Jāti) (3)	122
Group (2)	124
Ascent and Descent (Ārohā, Avarohā) (4)	124
The Sonant (Vādī) (5)	125
The "Consonant" (Samvādī) (6)	125
Assonant (Anuvādī)	126
Dissonant (Vivādī)	126
The Relation between Tuning and Scale	127
Tetrachords and Mode-types (Thāts) (8 and 12)	127
The Number of Rāgās	130
Time of play (7)	131
Scale-types (Greek Genus) (9)	132
Characteristics and Expression (10 and 11)	133
Representation of Intervals by Ratios	134
Śruti-s (Analysis of Expression) (13)	134
Theme (Rūpā) (14)	135
Outline (15)	135

APPENDIX ONE

Bibliography

I Sanskrit Works, published	139
II Sanskrit Manuscripts, unpublished	142
III Persian and Urdu Manuscripts	149
IV Hindi Manuscripts	149
V Hindi and Marāṭhī Works, published	149
VI Bengali Works, published	151
VII Urdu Works, published	151
VIII Telugu Works, published	151
IX Gujarati Works, published	151
X English and French Works	152

APPENDIX TWO

Sanskrit References

PART I

THEORY

अथनादम्य चोत्पात्तिंवच्ये ग्रास्त्रविवेकतः ।
धर्मार्थकाममोक्षाणामिदभिवैकसाधनम् ॥

“Extracting the essence of the Scriptures, I shall tell the origin of Intelligible Sound which is the only means of achieving the four aims of human life—righteousness, prosperity, pleasure and liberation.” (Saṅg. Darp. 1-29.)

वीणावादनतत्त्वाः श्रुतिज्ञातिविशारदः ।
तालज्जञ्चाप्रयासेन मोक्षमार्गं नियत्कृति ॥ (1. प्रथ)

“He who knows the inner meaning of the sound of the lute, who is expert in intervals and in modal scales and knows the rhythms, travels without effort upon the way of liberation.” (Yājñavalkyā Smṛiti III, 115.)

CHAPTER I

THE THEORY

पशुः शिशुर्गो वापि नादनं परितृप्यते ।
अनो नादस्य माहात्म्यं ध्यात्वातुं केन शक्यते ॥

"Animals tamed or wild, even children, are charmed by sound.
Who can describe its marvels?" (*Saṅg. Darś. 1-31.*)

Origins

UNDER the name of *Gāndharvā Vedā*,* a general theory of sound with its metaphysics and physics appears to have been known to the ancient Hindus. From such summaries as have survived till modern times, it seems that the *Gāndharvā Vedā* studied every possible way of using the properties of sound, not only in different musical forms and systems but also in physics, medicine and magic. The rise of Buddhism with its hostility towards tradition brought about a sharp deviation in the ancient approach to the arts and sciences, and their theory had often to go underground in order to avoid destruction. It was at this time that the *Gāndharvā Vedā*, with all the other sacred sciences, disappeared; though the full tradition is said to survive among the mysterious sages who dwell in Himalayan caves.†

Buddhism reacted against the stiffness of the old order, which it tried to "humanize". The Buddhist reformers thought that by destroying the rigid frame of ancient society they would be able not only to preserve its culture but to

* *Transliteration*—The Sanskrit alphabet represents a complete phonetic system. This characteristic is not preserved in the generally accepted methods of transliteration. But changing the usual system as little as possible, we transliterate:

च as ch; च्छ as chh; च्छ' as ch'h; the soft dental ष as śh; the hard palatal ष as sh; ष्ट्र as ṣi; ष्ट्र' as ṣri.

The final "dropping" short "a", which in classical Sanskrit exactly corresponds with the French mute "e", bears a short accent. E.g. Śivā should be pronounced almost like the English word *shiver*.

† A short account of the contents of the *Gāndharvā Vedā*, said to have been collected from such sources, has been published in Motilal Gaud's *Hindutvā* (in Hindi), Benares, 1938.

give it a new impulse. They imagined that a choice could be made between values whose importance they recognized and certain social rules and conceptions which they were not ready to accept. Circumstances, however, did not always justify this distinction and under Buddhism the old culture very quickly declined. When the representatives of the old order, who had been able to maintain their tradition underground through the centuries of persecution, arose again, their intellectual and cultural superiority was in many fields so great that Buddhism was defeated. In hardly more than a few decades, Buddhism, by the mere strength of intellectual argument, was wiped out from the whole Indian continent over which it had ruled for a thousand years. It was then (during the sixth and seventh centuries) that an attempt was made, under the leadership of Śaṅkarāchāryā, to restore Hindu culture to its ancient basis.

A number of eminent Brāhmaṇas were entrusted with the task of recovering or re-writing the fundamental treatises on the traditional sciences. For this they followed the ancient system which starts from a metaphysical theory whose principles are common to all aspects of the universe, and works out their application in a particular domain. In this way the theory of music was reconstructed.

In certain cases the number of texts that had been preserved was sufficient and the task of reconstruction was comparatively easy; in other cases it proved almost impossible. Musical theory and the theory of language had been considered from the earliest times as two parallel branches of one general science of sound. Both had often been codified by the same writers. The names of Vaśiṣṭha, Yajñavalkyā, Nāradā, Kaśhyapā, Pāṇini are mentioned among these early musicologist-grammarians. Nandikeśvara was celebrated at the same time as the author of a work on the philosophy of language and of a parallel work on music. His work on language is believed to be far anterior to the *Mahābhāṣya* of Patañjali (attributed to the second century B.C.)* into which

* The date of Patañjali may however be much earlier. The main modern argument used to fix his date as late as the second century B.C. is based on an example in his grammar (3,2,111) which reads:

"The Yavanā (Ionian) was besieging Sāketā (Ayodhyā), the Yavanā was besieging Madhyamikā."¹ The Hindu historians, however, consider that the term "Yavanā" (Prākṛita "Yonas"), later used for "Greeks", was a common name for all the people living beyond the North West frontier.

THE THEORY

it is usually incorporated, though it is thought to be probably posterior to Pāṇini, who himself, according to modern grammarians, lived not later than the sixth century B.C. The chronology of works on music would seem, however, to place both Pāṇini and Nandikeśvara at a much earlier date. The work of Nandikeśvara on the philosophy of music is now believed to be lost,* but fragments of it are undoubtedly incorporated in later works. At the time of the Buddhist ascendancy, when so much of the ancient lore had to be

* A small surviving part of an anonymous manuscript in the Bikaner Library, called *Rudrā-damarūdbhavā-sūtrā-vivaranam* (published by Mādhava Kṛiṣṇa Sarma in the *New Antiquary*, June, 1943), explains the formation of musical sounds on the basis of the Maheśvara Sūtrās, which Nandikeśvara also takes as the basis of the philosophy of the Sanskrit language. This must either be a fragment of the work of Nandikeśvara or a study directly based upon it. The first part of the manuscript is a fragment of another work in no way connected with the second part. It deals with the qualities and defects of singers in verses also found in the *Saṅgītā Ratnākara* of Śāringadevā.

A part of Nandikeśvara's work on dancing, the *Abhinaya Darpaṇa*, has been printed (Calcutta 1934, with English translation by Manomohan Ghosh). An earlier translation by Ananda K. Coomaraswamy appeared under the title *The Mirror of Gesture* (Harvard University Press, 1917).

Further fragments of Nandikeśvara's technical work on dancing and music, the *Bharatā-aryavā* in particular, lie, unpublished, in the Tanjore and Madras libraries.

"On the Eastern border of this land (India) live the Kirātā-s (aborigines) and on the Western the Yavanā-s." (*Mārkandeyā Purāna*, 57, 8.)²

Originally the term seems to have been used for peoples like the Cretans and Myceneans who occupied Asia Minor and the Greek mainland and islands long before the Achean and Dorian invasions. The fact that Western history has kept practically no record of their advanced state of civilization and of their contacts with the East is no proof that these did not exist. A careful study of the Puranic texts referring to the Mediterranean civilizations anterior to Athens and Rome would yield very interesting documents.

By many ancient peoples the word Yavanā was used for inhabitants of Ionia, a country celebrated from very remote times for its twelve (later thirteen) cities, and which apparently included the Greek coast and islands and the Northern coast of Asia Minor. *Genesis* gives the name as *Yovon*

; 1 ; which is thought to refer mainly to the island of Cyprus, which the Babylonians visited at a very early period (circa. B.C. 3750). The name "Yovon", in the Bible, often refers, also, to the lands later inhabited by the Greeks.

The word Yavanā or Ionian also occurs in the Tel-el-Amarna Tablets (fifteenth century B.C.) as *Yivana*, and in the cuneiform inscription of Sargon (B.C. 700) as *Javanu*. In the latter case it refers to the island of Cyprus, where it chiefly was that the Assyrians came in contact with the Ionian power.

NORTHERN INDIAN MUSIC

abandoned, grammatical works were considered more important than musical ones because the grammatical theory was essential for the understanding of the Vedic texts and of all the subsequent philosophical systems. From the earliest times, this theory of grammar had been condensed into aphorisms that could easily be memorized and, when the need arose, transmitted orally. They could thus be kept intact for centuries, in secret, escaping all possible investigation.

Every science could not, however, be easily condensed into aphorisms, and the preservation of the theory of music, among others, had apparently to depend on lengthy texts difficult to memorize entirely; though, from the kind of differences that appear between the various versions of some of them, it seems that these too were transmitted orally over a long period.

The material available for the reconstructive work of the medieval authors consisted in a certain number of these older books on music which they used as a base; but it appears that these medieval scholars had but little knowledge of the physical properties of sound or of the laws of acoustics. This resulted in their attempt to explain, with the most unexpected misconceptions and mistakes, basic principles laid down in the ancient treatises with a rare knowledge of physical as well as metaphysical reality—a knowledge that modern means for the study of sound now allow us to appreciate more fully.

Very like the Chinese philosopher who, knowing that there must be five elements, explains that they are water, air, earth, silk and bamboo, so medieval Sanskrit writers make doubtful assertions about microtonal intervals (*śrutis*), basic scales (*grāmās*), the correspondences of the notes, and so on. Yet since their attitude was one of respect and faith towards the ancient authors, the explanations alone are mistaken. They did not usually attempt to reshape the theory, which therefore remained in essentials as it was, and they reproduce lengthy passages from the ancient books without alteration. This is of course fortunate for us. Wherever we happen to possess more light on the acoustic basis of these definitions, we can reconstruct the right interpretation and see how accurately these principles were enunciated from the first.

As happens at every epoch, medieval writers tried to and in the ancient books the confirmation of what they believed they knew instead of a description of what they did

THE THEORY

not know. This attitude obviously limited their musical theory and confused all the points that dealt with musical forms unknown to them. It reduced the theory to little more than a description of the musical system in use in the India of their day, whereas its purpose was to provide a general theory of sound. This may also explain the difficulties met with by modern musicologists when they wish to bring back within the frame of the medieval theory the musical system in use in India at the present time, a system which in some of its features is quite distinct from the medieval one.

The musical system upon which the Indian "classical music" of to-day is based appears to be even more limited than the medieval one and has also to some slight extent modified its form under influences from outside. And thus, though it is necessarily included in the definitions of the Gāndharvā Vedā—because these definitions refer to acoustic facts and not to any particular system—it is not always in accordance with the explanations of medieval scholars.

In this book, since we are dealing exclusively with the living music of Northern India only such quotations will be given from the classical books both pre- and post-Buddhistic as refer to musical forms still in use. The author hopes to make the general theory of music of the Hindus and the philosophy of sound, as they are explained in the Gāndharvā Vedā, the subject of another study.

*The Antiquity of Indian Music**

It has been said that there is a gap between the Indus civilization (at present believed to date from the third or second millennium B.C.) and the beginning of Buddhist times, about the fifth century B.C.

We are sometimes led to believe that, except for the Vedic texts, the language of which is quite distinct from classical Sanskrit, no texts remain from that enormous period of time. It should however not be forgotten that, according to Hindu tradition, the Vedic texts, at first transmitted orally, had already been written down at a much earlier date: Buddhism (as three centuries earlier Jainism had done) reacted against the use of Sanskrit as an already too ancient priestly language

* See Foreword.

no longer understood by the common people, a language they wanted to replace by more common dialects such as Pāli or Māgadhi, derived from classical Sanskrit through centuries of popular misuse. There is therefore solid linguistic evidence to suggest that a great number of Sanskrit works may be by many centuries anterior to the reformation of Jainism by Pārśvanāthā at the beginning of the eighth century B.C.* Furthermore, the date given by Hindu tradition for the Mahābhāratā war is about 3,000 B.C., a date which seems to be corroborated by the astronomical observations found in many Sanskrit works. This corresponds with the period of Mohenjodaro.

In fact the period extending from the Mahābhāratā war to the beginnings of Buddhism may well have been one of the greatest the culture of India has known, and its influence extended then (as indeed it still did much later) from the Mediterranean to China.† Traces of its Mediterranean aspect have been found in the Cretan and Mycenean remains as well as in Egypt and the Middle East.

The Vedās, which until the beginning of this period had been transmitted orally, were then written down, and, later on, the Epics and Purāṇas. Most of the treatises on the ancient sciences also belong to that age, though many may have been to a certain extent re-shaped later on. Ananda K. Coomaraswamy speaks of this "early Asiatic culture which once extended from the Mediterranean to China and as far south as Ceylon . . . in the second millennium B.C.".‡

* Jainism is considered to have begun from Rikhab Devā, an extremely ancient figure whose life-story is told in the Bhāgavatā Purāṇa. The dates of the two last reformers only of Jainism, Pārśvanāthā (born in 817 B.C.) and Mahāvir (born in 599 B.C.), are historically known and it is through them that Jainism is said to have been finally fixed in its present dual form.

† The ancient *Kinnari Viṇā* or *Kin*, for example, became known in China as the *Khīn*, a stringed instrument said to have been played by the first Emperor, Fu-Hi (circa 3000 B.C.). The Khīn is further mentioned in ancient Chinese chronicles such as the *Chū Ki* (second century B.C.) in reference to events of the sixth or seventh century. According to the *Li Ki*, Confucius (551-478 B.C.) always had his Khīn with him at home, and carried it when he went for a walk or on a journey.

In *Genesis* (iv, 21 and xxxi, 27) a stringed instrument of the same kind is called *Kinnor* (קִנּוֹר). David used to play the *Kinnor* as well as the *nebel* (lute).

‡ A. K. Coomaraswamy: *Arts and Crafts of India and Ceylon*, Foulis, 1913.

THE THEORY

So far as music is concerned, there is every probability that some of the texts quoted in later works were in existence many centuries before Buddhism. The practice of naming as well as quoting older authorities can allow us to establish a chronology, the author quoted being necessarily more ancient. Whenever we happen to know the date of one author we can thus generally know which authors came before him and which after. A careful study of a number of works which still survive but have not been published and are difficult of access would however be needed to make this chronology complete.

✓ The antiquity of Indian theatrical art and musical theory was well known to the ancient world. According to Strabo (*Geography* x, ii, 17) the Greeks considered that music "from the triple point of view of melody, rhythm and instruments" came to them originally from Thrace and Asia. "Besides, the poets, who make of the whole of Asia, including India, the land or sacred territory of Dionysos,* claim that the origin of music is almost entirely Asiatic. Thus, one of them, speaking of the lyre, will say that he causes the strings of the Asiatic cithara to vibrate."

Megasthenes† says that Dionysos "taught the Indians to worship the other Gods and himself by playing cymbals and drums: he also taught them the satyr dance which the Greeks call *kordax*".

"This is because they are, of all peoples, the greatest lovers of music and have practised dancing with great love since the days when Bacchus and his companions led their bacchanalia in the land of Ind." (Arrian: *Exp. Alex.*, VI, 3, 10.)

* Many ancient historians spoke of Dionysos (or Bacchos) as having lived in India. Megasthenes, who came to India in 302 B.C., tells us that the Indians counted 153 kings and 6,042 years between Dionysos and Alexander (who entered the Punjab in 329 B.C.). Similar information is also given by Pliny the Elder who, however, gives the number of years as 6,451. By comparing these Greek dates with those of the dynasties given in the different Purāṇas, several attempts have been made to identify Dionysos with some early figure of Indian History (particularly Manu or Krishnā). But from the similarity of the legends it appears that Dionysos must be Śivā and that the dates refer to one of his chief incarnations, as it is described in the *Śivā Purāṇa*.

Śivā is said to have been the first teacher of one of the most important traditions of music and dancing in India. Until quite a late period this tradition seems to have remained distinct from that of the *Gāndharvā Vedā*. Many Sanskrit works (a few of which are still available) were attributed to Śivā or his followers.✓

† Quoted by Arrian in his *Indika*, VII, 8 (written in 150 B.C.).

The Sanskrit Writers on Music

The main Sanskrit treatises on music appear, at first sight, to present a mass of conflicting definitions. Careful study of the divergences and similarities between certain groups of texts, however, shows that these belong to different classes and schools: some are original works based upon coherent theory and accurate experience, the rest more or less adapted compilations. From the point of view of Hindu tradition—one which impartial modern scrutiny seems to support—it is the earlier works which have the greater authority and represent the original theory. Although fragments of several such works are available, most of them now appear to be lost or inaccessible.

Among important landmarks of the literature on music must also be counted portions of certain Purāṇas, particularly the Viṣṇu Dharmottarā, Mārkaṇḍeyā Purāṇā and Vāyu Purāṇā. The Hindus claim a great antiquity for these Purāṇas and this seems to be corroborated by the technical terms used in reference to music. These Puranic texts are however often difficult to read because of the abundance of copyists' mistakes in technical passages.

The Sanskrit authors on music can be divided into four main periods. The first period is that of those whose names are mentioned in the Purāṇas and in the Epics (Mahābhāratā and Rāmāyaṇā), the second that of the authors mentioned in the early medieval works alone, and not in the works of the first period. These must necessarily belong to the intermediary age. The third period is that of the authors who wrote between the early medieval Hindu revival and the Muslim invasion, and the last or modern period that of Sanskrit writers under Muslim and European rule. Exact dates can usually be ascertained only for the authors of these two last periods.

The First Period (The Vedic-Purāṇic-Epic Period)

The names of authors belonging to this early period are numerous. The few works that survive allow us to fix the chronology of the most important of them with a certain amount of accuracy, but any attempt at fixing definite dates or periods could only be conjectural. We can safely consider

THE THEORY

that the lower limit given by the bulk of Purāṇic and Epic literature places this first period of literature on music in what we may call the Pre-Buddhistic age.

A chronological chart can be built up showing the relative anteriority of authors mentioned or quoted in the works available in full or in fragments (see opp. p. 32). Although it is far from exhaustive, this chart shows the affiliations between the most important Sanskrit writers on music of the early period, which must have extended over many centuries. Most of these early works are archaic in their language.

The few difficulties we meet in establishing their chronology, can in the main be solved.

The Different Nāradā-s

There were probably three authors known by the name of Nāradā. One, the author of the *Nāradīyā Śikṣhā*, is probably the earliest writer on profane music any of whose writings have survived in full. He is quoted by all subsequent writers of the early period, who in turn are quoted by later Nāradā-s, the authors of the *Saṅgītā Makarandā* and the *Chatvārimśach'hatā Rāgānirūpanam*.

According to tradition, the *Nāradīyā Śikṣhā* forms part of the later Vedic literature and although some attempts have been made to date this work rather late, there is no solid evidence to make us disbelieve the tradition. The fact that the *Nāradīyā Śikṣhā* mentions the names of only a few of the earliest authorities on music who are also mentioned in the *Vaśiṣṭhā* and *Yājñavalkyā Śikṣhās*, seems to confirm it as a very early work. If we were to consider the *Nāradīyā Śikṣhā* a late work we should have to make room for some other very early work of the same description forming the link between Vedic chant and profane music and mentioned by Yāṣṭikā, Nāradā II, Kohalā, Mataṅgā and practically all subsequent authors. There seems, however, to be no sufficient reason to doubt the authenticity of the available *Nāradīyā Śikṣhā*.

The *Pañchamā Samhitā* and *Nāradā Samhitā* are probably the work of the later Nāradā (Nāradā II), the author of the *Saṅgītā Makarandā*.

The Bharatā Problem

The available work of Bharatā, the *Nātyā Śhāstrā*, is a compilation which has been variously dated between the second century B.C. and the fourth century A.D. It mentions Kohalā and Dattilā but not Mataṅgā and probably contains fragments of the work of Nandikeśhvarā, Kohalā, etc., and the earlier *Bharatā Śhāstrā-s*. In fact it may be doubted whether a sage Bharatā ever existed. If he did exist he must have been the Bharatā Vṛiddhā (Bharatā the Elder) mentioned by Śhāradātanayā, as distinct from the author of the *Nātyā Śhāstrā*. The word "bharatā" means a dance-actor and was used as a common name in the title of all the treatises on stage technique. Thus we hear of Ādi Bharatā, Nandikeśhvarā Bharatā, Arjunā Bharatā, Mataṅgā Bharatā, Kohalā Bharatā, etc. "Bharatā nātyā śhāstrā" would then simply mean "the text-book of the dance-actor" and this is very much what it is—a practical compilation of authoritative works on the subject periodically brought up to date.

The *Nātyā Śhāstrā* cannot, therefore, be taken as a sure basis for determining chronology and we should not be surprised to find Bharatā himself mentioning as his sons several authors later than the original *Nātyā Śhāstrā*, though all of them belong to an early period* or must at least be anterior to the latest recension of the *Nātyā Śhāstrā*.

Mataṅgā

It seems at first difficult to know in which period to place Mataṅgā, the author of the *Bṛihaddeśhi*. The text mentions a number of early authors, including Yāṣṭikā and Bharatā. It has also an extensive commentary which mentions still further writers, including Nandikeśhvarā, Kohalā and Dattilā. Some

* The tradition is that Bharatā had four sons—Śhāṇḍilyā, Vātsyā, Kohalā and Dattilā.

"I taught the perfect practice (of music) to my sons, Śhāṇḍilyā, Vātsyā, Kohalā and Dattilā." (*Nāt. Śh.* 1-26.)³

"The family of Bharatā-s will be made famous in the future by the Bharatā-s—Kohalā, and, after him, Vātsyā, Śhāṇḍilyā, Dattilā." (*Nāt. Śh.* 36, 70-71.)⁴

These obviously later additions only mean that these four authors are considered the direct recipients of the tradition of Bharatā, and their work has therefore great authority.

THE THEORY

medieval and modern authors have considered this commentary the work of Mataṅgā himself. But this is unlikely since it mentions Kohalā, who himself, in a passage reproduced by Kallināthā, quotes Mataṅgā. The name and the story of the sage Mataṅgā are mentioned in the *Rāmāyaṇā* and the *Mahābhāratā* and in several Purāṇas. This places him definitely in the early period.

The Three Chaturā-s

A quotation from Tumburu is found in Kallināthā's commentary on the *Saṅgītā Ratnākara* (I, 3, 10–16). The same quotation in the commentary on the 27th ślokā of Mataṅgā's *Bṛihaddesḥī* is, however, attributed to Chaturā. But Chaturā is a name given to Kallināthā himself and this commentary might be thought to be late enough to quote him. But Simhabhūpālā—more than a century before Kallināthā—repeatedly quotes from this commentary on the *Bṛihaddesḥī* which he seems to consider the work of Mataṅgā himself. It would therefore appear that the title of Chaturā (clever) was also given to the early writer Tumburu, the same name having been used later for Kallināthā and also for Dāmodarā Miśhrā, the author of the *Saṅgītā Darpaṇā*.

Māṭriguptā and Rudraṭā

The Māṭriguptā mentioned by Nāradā (in the *Chatvārimśach'hata Rāgānirūpaṇam*, and as Māṭraguptā, in the *Saṅgītā Makarandā*) has sometimes been identified with the celebrated poet Māṭriguptā of the seventh century. This is not absolutely impossible, though it is unlikely.

Similarly, the Rudraṭā mentioned by the author of the commentary on the *Bṛihaddesḥī* and also by Abhinavā Guptā has been said to be the ninth century author of *Kāvyālankārā*, or Rudrā Bhaṭṭā, the author of *Śṛiṇgāratilakā*.

Such identifications should not be attempted without solid ground. The Sanskrit literature on music extends over so vast a period that similarities of name are bound to occur. The difficulty is rather to distinguish between numerous authors of the same name. We know of at least ten Bhaṭṭā-s, authors

of different works, six Somā-s or Someśhvarā-s, five Nārāyaṇā-s, four Dāmodarā-s, etc. Among the works still available, we have two *Saṅgītā Ratnākarā*-s, three *Saṅgītā Nārāyaṇā*-s, four *Bharatā Śhāstrā*-s, four *Rāgā Mālā*-s, and so on. Hasty identifications are sure to lead to mistakes such as have already been made in the case of the different Dāmodarā-s.

Many of the available works of the early period have been re-shaped over and over again. This is only natural, for they were teachers' text-books and not library records. But to take as an earliest limit for their writing the date of their latest re-shaping, as some over-cautious students have a tendency to do, gives a wholly erroneous picture of musical history.

All that is available of the early works is evidently directly based on the *Gāndharvā Vedā* and the Śivā tradition. In these we find a theory of sound co-ordinated with experienced facts which we can easily grasp. Taking into account the changes that have occurred in the scale, in the tonic and so on, the interpretation of the early works presents no very arduous problem except that of restoring the text where it has been corrupted.

If the commentary on the *Brihaddeśī* really is the work of Mataṅgā the lower limit of the Epic-Puranic period in the chart (opposite p. 32) must be placed before Gāndharvā Rājā, otherwise the chronology it shows will not be much affected.

The First Period

Several names mentioned in later works may refer to some of the earliest authors. For example Pārvatī-pati and Śharvā are names of Śivā: they may stand for Śivā, the first, divine expounder of music, or for some of his later followers; Māgheśhā may be Indrā, Kamalāsyakā may be Brahmā. Yet it would be incautious to make such an assertion without evidence since these are names that frequently occur.

The Kṣhemarājā mentioned by Kohalā cannot be the celebrated disciple of Abhinavā Guptā, since Kohalā's lowest possible limit is the fourth century A.D., six centuries before Abhinavā Guptā.

The Second Period (Buddhistic)

This period (which we may generally term Buddhistic since, according to the Hindu tradition, Buddhism arose and declined in India within its limits) extends from the Epic-Puranic period to the early medieval Hindu revival.

A few important works that probably belong to the beginning of this period are available (see previous chart). These include extensive fragments of Kohală.

The lower limit of the early works of the first period is set by the fact that Kohală and Dattilă are mentioned in the *Nātyā Śhāstrā*, the last re-shaping of which, as we have already seen, is variously dated between the second century B.C. and the fourth century A.D., the first of these dates being the more likely.

Very few of the numerous musical works of this second period have so far been found or in any way edited or studied. In most cases we have to content ourselves with authors' names without attempting to establish their chronological relationship. The authors who can safely be attributed to this period are those not mentioned by any writer of the pre-Puranic-Epic period but mentioned as authorities by authors of the tenth, eleventh and twelfth centuries (chiefly Abhinavā Guptă, Śhāradātanayā, Nānyā Bhūpālā, Pārshvadevā and Śhārṅgadevā).

This gives us a list of names, some of which may however belong to the first period or to the earlier part of the third period.

•

Writers of the Second (Buddhist) Period

Āstikă, Apisali (author of a *Śikṣhā*), Uttară, Uvată, Umāpati⁺, Kātyāyană⁺, Kāmadevă, Kumbhodbhavă, Ghanṭakă, Chhatrakă, Dattă, Devărājă (may be Devendră), Drauhini, Dhenukă, Priyātithi, Bindu Rājă, Bṛihat Kaśhyapă, Bhaṭṭă, Bhaṭṭă Yantră, Bhaṭṭă Sumanas, Bhaṭṭa Vṛiddhi, Bhaṭṭă Gopālă⁺, Bhaṭṭă Śhubhākară⁺ (commentator on *Nāradīyā Śikṣhā*), Rahulă, Venă, Vyāsă, Vāchaspati, Śrī Harshă (different from the patron of the seventh century poet Bāṇă), Sakali garbhă, Sūryă (may be Bhāskară), Sureśhvară,⁺ Someśhvară I⁺ (different from the two later Someśhvară-s, authors respectively of *Manasollāsă* and *Saṅgītă Ratnāvalī*).

The Third (Medieval) Period

This period corresponds with the Hindu revival after the decline of Buddhism. All the earliest books of this period are lost. The first available medieval work is the *Abhinavā Bhāratī*, a tenth century commentary by Abhinavā Guptā on the *Nātyā Śhāstrā*.

Authors of the Third (Medieval) Period

I

Udbhaṭā (late eighth century): Comm. on *Nātyā Śhāstrā*
Lollaṭā (between Udbhatā and Abhinavā Guptā, c. 825):
Comm. on *Nātyā Śhāstrā*.

Śhaṅkukā (id., c. 850): Comm. on *Nātyā Śhāstrā*.

Utpalā Devā (tenth century; Abhinavā's guru's guru).

Nṛisimhā Guptā (Abhinavā's teacher and father).

Abhinavā Guptā (end of tenth century): *Abhinavā Bhāratī*,
comm. on *Nātyā Śhāstrā*.

Bhojā (King) (1010–1055).

Simhanā (eleventh century or early thirteenth, before
Hammirā).

Abhayā Devā (a Jain) (1063–?).

Mamatā (1050–1150): *Saṅgītā Ratnā Mālā*.

Rudrasenā (before Devendrā).

Someśhvvarā II (1131): *Manasollāsā* or *Abhilāshārthā Chin-
tāmani*.

Lochanā Kavi* (1160): *Rāgā Tarangiṇī*. •

* There has been some speculation about the date of Lochanā Kavi. The *Rāgā Tarangiṇī* bears the date 1082 of the Śakā era. This would be 1160 A.D. Lochanā Kavi, however, mentions the names of Jayadevā and Vidyāpati. The date of Jayadevā is about 1116 A.D., but the known Maithili poet Vidyāpati is thought to have lived about the fourteenth century. Either Lochanā lived after the fourteenth century, or this name refers to some other Vidyāpati. It appears that there is a local Śakā era in the East of India according to which 1082 would be 1700 A.D. This would bring Lochanā to a much later date, but against it there is the fact that Lochanā is quoted by Hṛidayā Nārāyaṇā (c. 1667) who himself is quoted by Bhavā Bhaṭṭā (c. 1700).

The work of Lochanā has therefore been dated either 1160 A.D., or fourteenth century (after Vidyāpati), or 1700 A.D.

Since the last date seems impossible, it is likely that the earlier of the remaining dates is the true one and that as some Bengali scholars assert, there was an earlier Vidyāpati.

THE THEORY

Paramardī (1165–1203?).

Devendrā (after Bhojā): *Saṅgītā Muktāvalī*.

Someśhvare III (1174–1177): *Saṅgītā Ratnāvalī*.

Śhāradātanayā (c. 1200): *Bhāvā Prakāśhā*.

Nānyā Bhūpālā or **Nānyā Devā** (eleventh or twelfth century, between Abhinavā Guptā and Śhāringadevā): *Sarasvatī Hridayālamkārā*.

Jaitrā Simhā (c. 1213? before Hammirā): *Bharatā Bhāṣhyā*.

Śhāringadevā (1210–1247): *Saṅgītā Ratnākarā*.

II

Jayasimhā (before Hammirā).

Gaṇapati (c. 1253? before Hammirā).

Jayasenā (c. 1253): *Nṛittā Ratnāvalī*.

Hammirā (1283 or 1364): *Saṅgītā Śhṛīngārā Hārā*.

Gopālā Nāyakā (1295–1315).

Pratāp (King ?): *Saṅgītā Chūḍāmani*.

Palkuriki Somanāthā (thirteenth–fourteenth century):

Panditārādhyaḥārītā, Bāsavā Purāṇā.

Vasantā Rājā (King Kumārāgiri, before fourteenth century):

Vasantā Rājīyā Nātyā Śhāstrā.

Digambarā Suri (before Pārvīvadevā).

Pārvīvadevā (before Simhā Bhūpālā, after Bhojā and Paramardī): *Saṅgītā Samayā Sārā*.

Śhāringadharā (1300–1350): *Śhāringadharā Paddhati*.

Haripālā (1309–1312): *Saṅgītā Sudhākarā*.

Śhri Vidyā Chakravartin (early fourteenth): *Bharatā Saṅgrahā*.

Sudhākalasā (1323–1349): *Saṅgītā Upaniṣhad*.

Simhabhūpālā (c. 1330): *Sudhākarā*, a comm. on *Saṅgītā Ratnākarā*.

Viśhveśhvare (c. 1330).

Vidyāranyā (1320–1380): *Saṅgītā Sārā*

Vemā Bhūpālā (late fourteenth–early fifteenth century):
Saṅgītā Chintāmaṇi.

Gopendrā Tippā Bhūpālā (1423–1446): *Tālā Dīpikā*.

Kumbhakarṇā (1433–1468): *Saṅgītā Rājā, Saṅgītā Kramā Dīpikā*.

Kallināthā (middle fifteenth century): *Kalānidhi*, a comm. on *Saṅgītā Ratnākarā*.

NORTHERN INDIAN MUSIC

Kamală Lochană (c. fifteenth ?): *Saṅgītā Chintāmaṇi*,
Saṅgītāmṛitā.

Keśhvā (between 1240 and 1664): comm. on *Saṅgītā Ratnākarā*.

Rāmānandā Nārāyaṇā Śivā Yogin (after thirteenth century): *Nāṭyā Sarvasvā Dīpikā*.

The longest work of the medieval period is the *Saṅgītā Ratnākarā* of Śāringadevā (1210–1247 A.D.). It has several valuable commentaries, two of which—by Simhabhbūpālā (c. 1330) and by Kallināthā (fifteenth century)—have been published.* The *Rāgā Tarangīnī* of Lochană may also belong to this period.

The Fourth (Modern) Period

With the advent of foreign invasions musical culture quickly decays. A few authors, however, either attempt to restate the old theory or to re-shape it so that it may agree with a changing practice. Musicians had found many points of the reconstructed medieval theory irrelevant when it was confronted with the musical practice of their day. A series of attempts was therefore made to reconcile it with the facts. The chief works of this kind are the *Svarā-melā-Kalānidhi* of Rāmāmātyā (1549), the *Rāgā Vibodhā* of Somānāthā (1610), the *Saṅgītā Darpanā* of Dāmodarā Miśhrā (1625) and especially the *Chaturdāṇḍī Prakāshikā* of Veṅkaṭā Makhin (1620) the systematizer of Karnatic music. But these efforts only added to the confusion, for in their attempt to explain apparent contradictions these late authors often forced very far-fetched interpretations upon the ancient technical terms and theories.

There followed a series of more recent works which complete

* In the first chapter of his *Saṅgītā Ratnākarā*, Śāringadevā gives the following list of his chief predecessors:

"Sadāśivā, Śivā, Brahmā, Bharatā, Kaśhyapā Muni, Mataṅgā, Yāṣṭikā, Durgā-śakti, Śārdūlā, Kohalā, Viśhākhilā, Dantilā (Dattilā), Kambalā, Aśhvatarā, Vāyu, Viśhvāvasu, Rambhā, Arjunā, Nāradā, Tumburu, Āñjaneyā, Mātṛiguptā, Rāvaṇā, Nandikeśhvārā, Svāti, Guṇā, Bindurājā, Kṣhetrā-rājā, Rāhalā, Rudraṭā, Nānyā Bhūpālā, and king Bhojā, Paramardī and Someśhā the world emperor; then the commentators of Bharatā: Lollaṭā, Udbhaṭā, Śaṅkukā, Bhaṭṭā, Abhinavā Guptā, the famous Kirtidharā and many more in the past were experts in music."*

THE THEORY

the link between ancient and modern music. In Northern India the *Saṅgītā Pārijātā* of Ahobalā (c. 1690) is considered the most important of these.

Chief Writers of the Fourth (Modern) Period

Harināyakā (c. 1500): *Saṅgītā Sārā*.

Meṣhākarnā (before 1509): *Rāgā Mālā*.

Madanāpālā Devā (c. 1528) *Anandā Sañjīvanā*.

Lakshmi Nārāyaṇā (first quarter of the sixteenth century):
Saṅgītā Sūryodayā.

Lakshmidharā (sixteenth century): *Bharatā Śhāstrā Granthā*.

Rāmāmātyā (1550): *Svarā-melā-kalā-nidhi*.

Puṇḍarikā Viṭṭhalā (late sixteenth century): *Shadrāgā Chan-drodayā, Rāgā Mālā, Rāgā Mañjari, Nartanā Nirṇayā*.

Tanappāchāryā (Tān-sen ?) (guru of Veṅkaṭā Makhin. c. 1600).

Mādhavā Bhaṭṭā (before 1610): *Saṅgītā Chandrikā*.

Somānāthā (1610): *Rāgā Vibodhā*.

Govindā Dikṣhitā (1614): *Saṅgītā Sudhā*.

Govindā (?): *Saṅgrahā Chūḍāmanī*.

Veṅkaṭā Makhin (c. 1620): *Chaturdandi Prakāshikā*.

Dāmodarā Miśhrā (1625): *Saṅgītā Darpaṇā*.

Hṛidayā Nārāyaṇā Devā (c. 1667): *Hṛidayā Kautukā, Hṛidayā Prakāshā*.

Bāsavā Rājā (1698-1715): *Śhivā Tattvā Ratnākarā*.

Ahobalā (before Śhrī Nivāsā and Bhavā Bhaṭṭā. First half of seventeenth century or earlier): *Saṅgītā Pārijātā*. (translated into Persian in 1724).

Śhrī Nivāsā (late seventeenth century): *Rāgā Tattvā Vibodhā*.

Abhilasā (seventeenth century): *Saṅgītā Chandrā*.

Jagaddharā (fourteenth to seventeenth century): *Saṅgītā Sārasvā*.

Kamalākarā (later than 1600): *Saṅgītā Kamalākarā*.

Kikarajā (seventeenth century): *Saṅgītā Sāroddhārā*.

Jagajjyotirmallā (seventeenth century): *Saṅgītā Sārā Saṅgrahā, Saṅgītā Bhāskarā*.

Raghunāthā Bhūpā (seventeenth century): *Saṅgītā Sudhā*.

Naṅgā Rājā (?): *Saṅgītā Gaṅgā Dharaṇā*.

Vedā or Muḍavedā (during the reign of Śhāhājī 1684-1712):
Saṅgītā Makarandā, Saṅgītā Puṣhpāñjali.

NORTHERN INDIAN MUSIC

Vaṅgamaṇi (seventeenth century): *Saṅgītā Bhāskarā*.
Śhukambharā (before eighteenth century): *Saṅgītā Dāmodarā*.
Somanāryā (after 1609): *Nātyā Chūḍāmaṇi*.
Bhāvā Bhaṭṭā (alias Anuṣṭupā Chakravartī after Ahobalā.
c. 1700): *Anupā Saṅgītā Añkuśhā*, *Anupā Saṅgītā Ratnākarā*, *Anupā Saṅgītā Vilāsā*.
Tulajādhipā (ruled 1729–35): *Saṅgītā Sārāmṛitā*.
Nārāyaṇā (King) (late eighteenth century): *Saṅgītā Nārāyaṇā*.
Kavi-ratnā Nārāyaṇā (eighteenth century): *Saṅgītā Sarani*.
Govindā (eighteenth century): *Saṅgītā Śhāstrā Saṅkṣhepā*.
Gopināthā Kavi Bhūṣhaṇā (late eighteenth century):
Kavichintāmaṇi.
Pratāp Singh (1779–1804): *Saṅgītā Sāgarā*.
Balarāmā Varmā (ruled 1798–1810): *Balā-rāmā-Bharatā*.
Śhrikanṭhā (late eighteenth century): *Rasā Kaumudī*.

Nineteenth and Twentieth Centuries

Rāmā varmā Mahārājā: *Saṅgītā Kritayah*.
Appā Tulsi: *Abhinavā Tālā Mañjari*, *Rāgā Chandrikā*, *Rāgā Kalpadrumānikurā*, *Saṅgītā Sudhākarā*.
Kṛiṣṇānandā Vyāsā: *Rāgā Kalpadrumā* (1843).
Appalāchāryā: *Saṅgītā Saṅgrahā Chintāmaṇi*.
Sourindrā Mohan Śharmā (Rājā Tagore): *Saṅgītā Sārā Saṅgrahā* (1875).
Viṣṇu Śharmā (Panḍit Bhāṭkhande): *Abhinavā Rāgā Mañjari* (1921), *Śhrīmallakṣhyāsaṅgītam* (1921).

Main authors in North Indian Languages other than Sanskrit

Rājā Mānsingh Tomar (1486–1518): *Mānā Kautuhalā* (Hindi).
Tān Sen (c. 1549): *Rāgā Mālā* (Hindi).
Śhri Rāmā Mallā: *Rāgā Vichārā* (Hindi).
Harivallabhā: *Saṅgītā Darpaṇā* (Hindi) (mss. dated 1673).
Gaṅgā Rām: *Setū* (comment. on Saṅg. Ratn.) (Hindi).
Deo Kavi: *Rāgā Ratnākarā* (1673) (Hindi).

THE THEORY

- Saiyid "Abd-al Wali" Uzlat: *Rāgā Mālā* (1759) (Hindustani).
- Kavi Kṛiṣṇā: *Rāgā Kutuhalā* (1781) (Hindi).
- Maharājā Sawai Pratāp Simhā Devā of Jaipur (1779–1804): *Saṅgītā Sārā* (Hindi).
- Muhammad Rezza: *Nāgmat-e-Asaphi* (1813) (Persian).
- Rādhā Mohan Sen: *Saṅgītā Tarāngā* (1818) (Bengali).
- Diwān Lacchhīrām; *Buddhi Prakāshā Darpañā* (1823) (Hindi).
- Kṛiṣṇānandā Vyāsā Devā: *Rāgā Kalpadrumā* (1842–1849) (Hindi and Bengali).
- Chhatrā Nṛipati: *Padā Ratnāvalī* (1854) (Hindi).
- Chunni Lāljī Gossain: *Nādā Vinodā* (1896) (Hindi).
- Bhānu Kavi (Jagannāth Prasād): *Kāvyā Prabhākarā* (1909) (Hindi).

Northern and Southern Music

'देश देश के भेद में निज निज है नाम।'

"Because countries differ, things have different names."
(*Rāgā Kalpadrumā*):

The later medieval author Rāmāmātyā wrote, in 1550 A.D., "The science of music has both in theory and in practice degenerated into conflicting views." (*Svar. Kal.* I, 24.)⁶

Though the many schools of music in India to-day each lay claim to the same ancient treatises, there are important differences in the music of the various parts of India. Hardly any of the modes of South Indian music are exactly identical with those of North Indian. Even in the North, rāgās and styles greatly differ from one province to another. Besides, there remain in many regions, in certain valleys of the Himalayas in particular, archaic forms of music with an upper tonic and a descending scale the study of which would be of great interest for the understanding of ancient music. Yet whatever these differences may be, they should not be over-estimated. It should be borne in mind that all these musical systems are but variations in the application of one common musical theory. They all pertain to the modal system of music expounded in the ancient treatises and their differences are not structural but merely differences in style or classification.

NORTHERN INDIAN MUSIC

It is a common saying in South India that Southern music represents the more ancient school while Northern music has evolved under outside influences. Except on very minor points, this opinion does not, however, agree with the facts. South Indian music was subjected to systematic reforms, one of the main reformers being Venkata Makhin in the seventeenth century. North Indian classical music, on the other hand, though it lent itself easily to temporary fashions, did not attempt to systematize them and seems to have remained very much what it was in spite of changes. It still conforms to-day with the definitions of the most ancient books.

The many stories that tell how the various styles of North Indian music were invented by musicians of the Muhammadan period have probably no basis in reality. Under Muslim rule, age-old stories were retold as if they had happened at the court of Akbar, simply to make them more vivid, and in conformity with the fashion of the day. Such transferences of legend are frequent everywhere. In Western countries, many a pagan god in this way became a Christian saint and many ancient legends were rearranged to fit into a Christian world. Some episodes in the life of the Buddha, for example, found their way into the *Lives of the Saints* where the Buddha appears under the name of St. Josaphat.

* * *

The impartial ear of sound-measuring instruments makes one marvel at the wonderful accuracy of the scales used by the great "Ustads" of Northern India—scales which in every way conform with the requirements of ancient Hindu theory. To say that they pertain to, or have been influenced by, the Arab or the Persian system shows a very superficial knowledge of the subject. These systems, originally mostly derived from Indian music, have become so reduced and impoverished in comparison with it that no one can seriously speak of their having had any influence on its development—unless one is referring only to the setting of certain types of poetry or to certain mannerisms or ways of sitting or of placing the voice. In fact the whole of the theory and most of the practice of Arab as well as Persian music is the direct descendant of the ancient Turkish music. At the beginning of the Muslim era, the Arabs themselves had hardly any musical system worth

THE THEORY

mentioning, and all the Arabic theoreticians—Avicenna,* Al-Farabi, Safi ud'din, and others—are claimed by the Turks as Turkish in culture if not always in race. In fact, they merely expounded in Arabic the old Turkish system interpreted in the light of Greek theory. This Turkish system was well known to medieval Hindu scholars who often mention it (under the name of *Turuşhkă*) as a system closely allied to Indian music. As I have explained elsewhere,† the seventeen intervals of the octave, as used by the Arabs, are identical with seventeen of the twenty-two Indian *Śrutis*, and there is no modal form in Arabic music which is not known to the Hindus.

* Avicenna was born about 980 A.D. in Balkh, in what is now known as Afghan Turkestan and, though his father is said to have been a Persian, the Turks claim him as their own in language and culture.

† See the author's *Introduction to the Study of Musical Scales*, p. 126.

CHAPTER II

THE NATURE OF SOUND

सुविनि सुखनिशानं दृःवितानो विनोदः
श्रवणहृदयहारी धन्मयस्याप्रदृतः ।
आतिचतुरसुगम्यो बहुभः कामिनीनो
जयनि जयनि नादः पञ्चश्चोपवेदः ॥

"Sound (*Nādā*) is the treasure of happiness for the happy, the distraction of those who suffer, the winner of the hearts of hearers, the first messenger of the God of Love. It is the clever and easily obtained beloved of passionate women. May it ever, ever, be honoured. It is the fifth approach to the Eternal Wisdom, the *Vedā*." (*Saṅgītā Bhāṣhyā*.)

ALTHOUGH the philosophy of sound is given a very important place in all the ancient treatises on music, we do not propose to deal with it very extensively here, for it is beyond the scope of this book. We shall limit ourselves to brief definitions of sound and of the different kinds of music, and then pass directly to practical description of the different elements that unite to form the Indian musical scales.

Intelligible Sound (Nādā)

Sound is said to be of two kinds, one a vibration of ether, the other a vibration of air. The vibration of ether, which remains unperceived by the physical sense, is considered the principle of all manifestation, the basis of all substance. It corresponds with what Pythagoras called the "music of the spheres" and forms permanent numerical patterns which lie at the very root of the world's existence. This kind of vibration is not due to any physical shock, as are all audible sounds. It is therefore called *anāhatā*, "unstruck". The other kind of sound is an impermanent vibration of the air, an image of the ether vibration of the same frequency. It is audible, and is always produced by a shock. It is therefore called *āhatā* or "struck".

Thus the *Saṅgītā Makarandā* (I, 4-6) says:

"Sound is considered to be of two kinds, unstruck and

THE NATURE OF SOUND

struck; of these two, the unstruck will be first described.

"Sound produced from ether is known as 'unstruck'. In this unstruck sound the Gods delight. The Yogis, the Great Spirits, projecting their minds by an effort of the mind into this unstruck sound, depart, attaining Liberation."⁷

"Struck sound is said to give pleasure, 'unstruck' sound gives Liberation." (*Nāradā Purānā*).⁸

But "this (unstruck sound) having no relation with human enjoyment does not interest ordinary men." (*Śh. tat. Ratn.* 6, 7, 12.)⁹

Not all audible vibrations are musical sounds. The sounds used in music are those whose mutual relations form an image of the basic mathematical laws of the universe. Thus musical sounds reproduce the first creation of the Primordial Intellect. This creation is at the same time a rhythm and a thought. In correspondence with this, the main characteristic of musical sounds is that, although they form simple physical relations, yet at the same time they convey ideas, they are expressions. This is why the sound of music is called "Nādā", "intelligible sound", and is said to result from the union of physical breath with the fire of intellect.

"The syllable 'Na' means breath, the syllable 'da' the fire (of intellect). Born of the union of breath and fire, intelligible sound is called Nādā." (*Saṅg. Mak.* 4, 18, reproduced in *Saṅg. Ratn.* 1, 3, 6, and *Saṅg. Darp.* 1, 39.).¹⁰

The Different Kinds of Musical Sound

In musical sound three main elements are usually considered—intensity, pitch and timbre.

Intensity is the relative strength of the sound, whether soft or vigorous.

Pitch is defined by the interval or the number of vibrations (śhrutis).

Timbre is the resonance of harmonics which differentiates the sound of various instruments or voices.

Timbres are classified into five main categories:

"Struck sounds are known to be of five kinds—produced by the nail (strings), by wind (flutes), from leather (drums), from metal (percussion-instruments) or from the body (the voice)." (*Saṅg. Mak.* 1, 7.).¹¹

Sacred and Secular Music

Music is of several kinds, each of which, according to its aim, follows distinctive rules. Certain combinations of sound help mental concentration and spiritual development. These are used in the higher form of sacred music which, in India, is connected with the singing of the Sāmā Veda. The theory of this sacred art is kept very secret for its power is said to be great.

Some aspects of the higher theory of sound are, however, often brought into practice for magical ends, for the treatment of diseases, or in taming dangerous animals. Most village magicians know how to utilize with great efficacy the psychic and hypnotic effect of certain sounds.

But there are other kinds of sound-relations which merely give pleasure, evoking tender emotions and pleasing ideas. Only such kinds of sound come within the scope of secular or Deśhi music, with which alone we are here concerned.

The following are the chief terms used in ancient books to define the different kinds of music:

GITA (Music):

"A particular arrangement of sounds which is pleasing [to hear] is called music (*gītā*). It is of two kinds—sacred or celestial (*gāndharvā*) and profane (*gānā*)."
(*Saṅg. Ratn.* II, 4, 1 reproduced in *Svar. Kal.* 2, 6.)¹²

GĀNDHARVĀ (Sacred or Celestial Music):

"That (music) which, sung by the celestial musicians or by those who know the theory of sacred music, has come to them through the beginningless tradition, and which is the sure means of attaining Liberation, is known to the sages as Celestial (*gāndharvā*)."
(*Saṅg. Ratn.* II, 4, 2, and *Svar. Kal.* 2, 7.)¹³

This celestial music is also called the "music of contemplation" (*mārgā*),* and it is said to be composed in accordance with the cosmic laws of which physical harmony is but a reflection.†

"That music, source of [all] development, which, in the beginning, was seen by the Creator in His contemplation and

* The derivation of the word *mārgā* is given by Kallinātha: "*Mārgā* means 'to contemplate' ".¹⁴

† The correspondences between spoken and musical sounds according to Mārgā theory are given in the *Rudrā-damarūdbhavā-sūtrā-Vivaraṇam*.

THE NATURE OF SOUND

afterwards performed by Bharatā and the other seers in the resplendent presence of Śambhu (Śivā), the Giver of Peace, is called the music of contemplation (mārgā).” (*Chat. Rāgā.* I, 8–9; and *Saṅg. Ratn.* I, I, 22–23.)¹⁵

GĀNA (Profane Music):

“That (music) which is composed according to rules by experts, which is sung in the modes of secular or worldly music (deśī rāgās), and which charms the people is *gānā*, profane music.” (*Saṅg. Ratn.* II, 4, 3 and *Svar. Kal.* 2, 9.)¹⁶

DEŚHI (Secular Music):

“The song, dance and play of instruments, different from country to country and performed as their people please, which charms the heart, is called deśī (secular).” (*Chat. Rāgā.* I, 10; and *Saṅg. Ratn.* I, I, 23.)¹⁷

Matāṅgā Muni considers that the word deśī (worldly) applies to all earthly music. “Sound (dhvani) goes everywhere in every place, hence it is called deśī.” (*Bṛihaddēśī* I, 2.).¹⁸

“All the world, animate or inanimate, is subject to sound (dhvani). Sound is divided into two kinds—manifest and unmanifest. Manifest is the sound that comes to the lips in the form of a ‘melodic movement’ (varṇā), giving rise to deśī (secular) music.” (*id.* I, 12.)¹⁹

CHAPTER III

THE SCALE

The Tonic or Drone

ALL music is based upon relations between sounds. These relations can, however, be worked out in different ways,* giving rise to different groups of musical systems, each of which has possibilities of expression peculiar to itself.

The modal group of musical systems, to which practically the whole of Indian music belongs, is based on the establishment of relations between diverse successive sounds or notes on the one hand and, on the other, upon a permanent sound fixed and invariable, the "tonic".

Contrary to common belief, modal music is not merely melody without accompaniment, nor has a song or melody, in itself, anything to do with mode. The modes used in the music of the Christian Church are modes only in name, though they may have been real modes originally. But much of Scottish and Irish music, for example, is truly modal: it belongs to the same musical family as Indian music and is independent of the Western harmonic system.

Indian music, like all modal music, thus exists only by the relations of each note with the tonic. It is this relation that determines whether a given note is a minor third, a fifth, a seventh or a fourth. The relation with the tonic, in fact, determines the expression of any given sound. The tonic must therefore be constantly heard. It can either be kept in the background like a drone or repeated at very frequent intervals, as is generally done in playing a stringed instrument. It should be remembered that the drone is not merely intended to keep the singers in tune, so that they may attack always at the correct pitch, but it is the key to all modal expression. So long as the hearer has not entirely identified himself with the tonic, but still perceives drone and melody as separate entities, it is impossible for him to follow or understand the meaning and the beauty of modal music.

* See the author's *Introduction to the Study of Musical Scales*, p. 21.

THE SCALE

It appears that at different periods different notes were taken as the starting-point of the scale. But the Śadžā (Sa, C), the tonic of all modern music, seems to have been considered as such since medieval times.

“Śadžā (Sa, C) is the first of all the notes and so it is the main or chief note.” (Simh. Comm. on *Sang. Ratn.* I, 4, 6–8.)²⁰

Although certain notes are more usually chosen as the tonic, any sound, whatever its pitch, becomes the tonic of scales that are built upon it. Śadžā (the tonic), which we here always transcribe as C, has not a fixed pitch like the C of key-board instruments. Thus:

“Dattilă explains that the Śadžā (the tonic) may be established at will at any pitch (on any śruti) and that, by relation with it, the other notes should be established at the proper intervals.” (Simh. Comm. on *Sang. Ratn.* I, 4, 15–16.)²¹

But a common tonic is necessary so that the rāgās, all built upon it, may be easily compared. In the notations of rāgās which form the second volume of this book, the tonic in every case is C, since that is usually considered the first note of the modern Western scale, just as Sa (in present-day music always the tonic) is the first note of the present Indian scale.

With C as tonic, the white keys of any keyed instrument, such as the piano or organ, give approximately the major mode or unaltered (śuddhā) scale, the scale of Bilāval in modern Indian music. Then the different modes can easily be visualized as modifications of this basic (śuddhā) scale.

The fact that the tonic used by most singers is lower—often B flat (Ni komală)—is of minor importance. Once the real nature of each mode has been properly understood (and musical practice shows that this is easier if the tonic is always C) the modes can be transposed into any pitch that may be suitable for different voices or instruments.

The Seven Svarās (Notes) ·

The word “note”, by which we here translate *svara*, is usually taken to mean merely a certain pitch of sound; but the word *svara* means a pitch of sound plus an expression, so

it would be more correctly rendered as "expressive note". As Mataṅgā says:

"The sound that generates an expression is a svarā, a note." (*Brihaddeśī* comm. on I, 63.)²²

The derivation of the word "svarā" is given as follows:

"The word svarā (note) is authoritatively known to mean 'that which shines of itself'—from *rājri* (to shine) with the word *svā* (self) as prefix." (Mataṅgā, *Brihaddeśī* I, 63.)²³

Indian music recognizes seven main and two secondary notes or svarās. These notes represent definite intervals and, as such, form the basic or "natural" (śuddhā) scale. They can, however, be raised or lowered to form other scales. In that case they are considered "altered" (vikṛitā). The notes that form the basic scale are called pure (śuddhā); notes lowered by half a tone are said to be komalā (soft=flat); notes raised by half a tone are called tivrā (sharp).

According to the Indian theory, the sounds of music are first perceived as relative pitches or intervals. It is only when their action has lasted for some time that these intervals convey to the mind an idea or an expression. Hence the arithmetical classification of sounds as intervals is considered prior to, and the basis of, their musical classification as "expressive notes". This differentiation, which was known to the ancient Greek as well as to the ancient Indian theorists, explains why the śrutis, or intervals, are considered the basis of the svarās or notes, or (in Greek terms) why the enharmonic is considered the basis of both chromatic and diatonic.

Mataṅgā says:

"Śhadjā (C) and the other notes (svarās) are always manifested through the 'interval they form with the tonic', their śrutis, just as a pitcher in the dark is made manifest by a lamp." (*Brihaddeśī* I, 36.)²⁴

The commentary on the *Rāgā Vibodhā* (I, 14) adds: "What then constitutes a note, a svarā? What is the particularity of these seven sounds? It is their intelligibility, their capacity to please the mind, to appeal to the consciousness of the hearer. And that they do this of themselves, without external aid." Nihśhaṇikā (Śāringadevā) says:

"Sound is first heard as an interval, a śruti; but the resonance that immediately follows, conveying of itself (without external aid), an expression to the mind of the hearer, is

THE SCALE

called a 'svară', a 'musical note'." (*Saṅg. Ratn.* I, 3, 24–25.)²⁵
And:

"The expressive sound, attractive and pleasing, which resounds immediately after the exact interval (the śruti) has manifested itself, is called svară (note)." (*Saṅg. Darp.* I, 57.)²⁶

The notes are seven in number.

"From the [twenty-two main] intervals (śrutis) come the seven notes (svarās) called Śhadjā, Rishabhā, Gāndhārā, Madhyamā, Pañchamā, Dhaivatā, Niṣhādā." (*Chat. Rāgā.* I, 18–19; *Saṅg. Darp.* I, 167; *Śh. tat. Ratn.* 6, 7, 22–23.)²⁷

"Others call them (for short):

Sa(Do), Ri(Re), Ga(Mi), Ma(Fa), Pa(Sol), Dha(La), and Ni (Si)." (*Saṅg. Darp.* I, 168.)²⁸

These notes, classified according to their relative importance, form the different parts of the "person" of the modal scale (mūrch'hanā).

"The note Sa (Do, the tonic) is said to be the soul, Ri(Re) is called the head, Ga (Mi) is the arms, Ma (Fa) the chest, Pa (Sol) the throat, Dha (La) the hips, Ni (Si) the feet. Such are the seven limbs of the modal scale." (*Nāradā Samhitā* 2, 53–54.)²⁹

"These notes, as a rule seven, correspond, in the view of Mataṅgā, with the seven basic elements of the physical body, and issue from the seven centres of the subtle body (chakrās)." (*Kall. comm. on Saṅg. Ratn.* 3, 23.)³⁰

An interesting way of defining the intervals represented by the svarās or notes of the unaltered (śhuddhā) scale is based on the cry of certain animals.

Most animals have a distinct cry based on two notes. If we consider the lower note as the Sa (Do), the higher note will give us a second, a third, a fourth, etc. This can be very easily verified by observation. Thus:

"Śhadjā (the octave) is sounded by the peacock; the next note Rishabhā (the major second) is uttered by the chātakā bird. The goat bleats Gāndhārā (the minor third),* the heron (krauñchā) cries Madhyamā (the perfect fourth). In the season of flowers, Pañchamā (the perfect fifth) is softly sung by the cuckoo (kokilā). Dhaivatā (the natural sixth) is croaked by the frog in the season of rains. At all times, O

* In terms of the modern one, the ancient natural scale would contain an E flat and a B flat (Ga komalā and Ni komalā).

Goddess! Niṣhādā (the minor seventh) is trumpeted by the elephant." (Kohalā quoted in *Bṛihaddeśī*, comm. on 63.)³¹

A similar list is given in the *Nāradā Samhitā* (2, 55–56) and a slightly different one in the *Maṇḍukī Śikṣhā* (I, 9) and in the *Nāradīyā Śikṣhā* (I, V. 4–5) also reproduced in the *Śiva latva Ratnākarā*. (VI, 7, 33–35).

The peacock's octave starts from the upper note. Kālidāsā says:

"Both listened to the lovely cry of crested peacocks raising their heads at the sound of the axle of the chariot. In this cry resound two kinds of Ṣhadjā svarā." (*Raghuvamśhā*, I, 39).³²

We observe that the goat bleats the minor third (Do Mi \flat , Sa-Ga komalā) that the angry elephant gives a prolonged Si flat (Ni komalā) interspersed with repeated lower Do-s (Sa). This shows clearly what was the ancient natural scale.

Readers in India will be familiar with the fifth of the cuckoo.

Some modern writers have suggested that these animal cries have an absolute pitch. So far as I am aware this is not a fact, but the intervals themselves do seem to be invariable.

The Intercalary Notes, Kākālī Ni and Antarā Ga

To the seven main notes were added, in ancient music, two accessory notes dividing the major tones Ni, Sa (modern Ni k., Sa; B \flat , C) and Ga, Ma (modern Ga k., Ma; E \flat , F) into two half-tones. These two intercalary (sādhāraṇā) notes were called Kākālī Ni (the pleasing Si) and Antarā Ga (intermediary Mi).

"When two śrutis (half a tone) from Sa (Do) pass into Ni (Si), this is (called) Kākālī (Si \flat , Ni śuddhā). The same from Ma (Fa) into Ga (Mi) is Antarā (Mi \flat , Ga śuddhā)." (Quoted in Simh. comm. on *Saṅg. Ratn.* I, 3, 40, and in *Śh. tat. Ratn.* VI, 7, 51.).³³

"The note called Kākālī is obtained by raising Ni (modern Ni k., Si \flat) by two śrutis. The note called Antarā is obtained from Ga (modern Ga k. Mi \flat) in the same way. They are not properly considered notes (svarās) because they cannot be taken as tonic (amśhā). So Niṣhādā (Ni k., Mi \flat) and Gāndhārā (Ga k., Mi \flat) are given prominence over them." (*Datt.* 16–17, also quoted by Simh. comm. on *Saṅg. Ratn.* I, 3, 56.)³⁴

The Śrutis (Intervals)

The names and classification of the intervals, the śrutis, as given in the ancient and the medieval books, present many problems of interpretation. For this there are the following reasons: (1) at different periods, different notes were taken as the tonic; (2) the more ancient treatises envisaged a descending scale, more recent ones an ascending scale; (3) even the scale considered natural was different at different periods. These difficulties will not surprise us if we remember that not only hundreds but thousands of years may have elapsed between the composition of different treatises.

As we have already seen, a note and its name, depend upon its relation with a fixed sound, the tonic; it can be a fourth, a fifth (a Ma (Fa), a Pa (Sol) etc.) only by relation with a basic sound (in modern Indian music, always the Sa—supposed here to correspond with C). Without such a relation an isolated sound cannot properly be called a “note”, a svarā.

Notes, therefore, depend upon intervals. From the dual point of view of physical relation and intelligible expression, the intervals from which the notes are produced are called “śrutis”, that is “audible”,* since it is only through hearing that the idea conveyed by the intervals can be grasped.

The number of possible intervals in relation to a given note is obviously limitless. Yet, the number of intervals used in music is comparatively small. This is due to the phenomenon of “consonance”. When the number of vibrations of two or more sounds are related with one another in simple ratios, the sounds seem to merge into one another. This is called consonance and is due to the fact that in such a case many of the “harmonics”, which form the upper structure of all sounds, coincide. Consonance gives our sense of hearing a pleasing and restful sensation.

Intervals, however, do not merely produce pleasing or unpleasing sensations. Like words, they also convey to the mind of the hearer distinct and definite expressions.

The Indian theory of music considers that a normal ear can easily perceive sixty-six distinct intervals within the compass

* “It is grasped by the ear, hence it is called ‘śruti’ (audible).”³⁵ “Śhrū”, which means ‘hearing’, is the root of the word. To this is added the (feminine) suffix ‘ktin’ (denoting an ‘abstract noun’). In this way the term ‘śruti’ is derived by experts in words [to represent] the ‘means of expression’.” (*Bṛihaddēśī*, comm. on 1, 26.)³⁶

of an octave—intervals, that is, which, when played one after another, appear distinctly as separate steps (we shall see later what these intervals are). We find, however, that among these intervals twenty-two are chiefly used in music. These twenty-two are those which represent the simpler ratios with the tonic and which convey to our mind the most distinct and pleasing expressions. In practice, therefore, the śrutis are said to number twenty-two, though, theoretically, sixty-six are possible. We may say, then, that within one octave we can accurately distinguish twenty-two distinct expressions and sixty-six distinct pitches; beyond this we can naturally conceive of limitless relations of sounds, but we shall never be able to recognize them easily by ear, so they cannot be utilized in music.

Three classes of intervals were already mentioned by Kohalā:

"Some experts in the knowledge of intervals say that they number twenty-two. Others speak of sixty-six and some consider them numberless." (Kohalā, quoted in *Bṛihaddeśī*, comm. on I, 28, and in both Simhabhūpālā's and Kallināthā's comm. on *Sang. Ratn.* I, 3, 8–9 and 10–16.)³⁷

The complete scale of the śrutis is not a practical musical scale which can be directly used in a melodic form. It is simply the assemblage of the different intervals used in different modes, and the standard, therefore, by which they can be compared and studied.

It is impossible to sing the complete scale of the śrutis accurately in succession (as some singers pretend to do), but they can all be sung with perfect accuracy when they are embodied in expressive scales. Hence Pārśhvadevā says:

"The twenty-two sounds cannot be produced (in succession) by the throat. They should therefore be demonstrated on a stringed instrument." (Attributed to the *Saṅgītā Samayāśāra*, though it is not to be found in the printed edition.)³⁸

The Measure of the Śrutis

According to the explanations given by Bharatā in the *Nātyā Śāstrā* and by Mataṅgā in his *Bṛihaddeśī*, the interval, or śruti, used as the basis of the division of the octave is the comma diesis $81/80$, defined as the difference between Pa [modern Dha (A)] considered as the upper fourth (ratio 4/3)

THE SCALE

from Ri [modern Ga (E)] and Pa as the lower fourth (4/3) from Sa [modern Ri (D)]. This comma is called the "measuring" or "standard" interval.

"The interval produced by the raising or lowering of Pañchamā (modern A, Dha), [which can also be envisaged as a] softening or [a difference in string-] length, is called the "standard interval" (pramāṇa śruti)." (*Nāṭ. Śh.* 28, 22; and *Brihaddeśī*, comm. on 1, 28.)³⁹

It is in fact true that if to the perfect fourth Ri Pa (D G, ancient Sa Ma) of 9 śrutis we add the minor tone Pa Dha (G A, ancient Ma Pa) of 3 śrutis, and then the perfect fourth Dha Ri (A D, ancient Pa Sa) of 9 śrutis, we find the octave from Ri to Ri (D to D) too short:

$$9 \text{ śrutis} + 3 + 9 = 21; \text{ (i.e. } \frac{4}{3} \times \frac{10}{9} \times \frac{4}{3} = \frac{160}{81} \text{).}$$

The difference between this and the real octave (2/1) is one śruti or comma (81/80). Thus: $21 + 1 = 22$ or $\frac{160}{81} \times \frac{81}{80} = \frac{2}{1}$

To obtain a perfect octave, then, we must either make the fourth Dha Ri (A D) too large (27/20), or raise the harmonic Dha (A = 5/3) into Dha+ (A+ = 27/16),* changing the minor tone Pa Dha (G A = 10/9) into a major tone Pa Dha+ (G A+ = 9/8). But, in this latter case, the fourth Ga Dha+ (E A+) will become too large. To correct it, we may raise the Ga (E) into Ga+ (E+); but this will destroy its consonance with Ni (B).

In this way we always have to choose between one perfect fourth or the other, the difference involved being in every case the very interval of one comma (81/80) or 5 savarts† which first appears at Dha (A) (ancient Pa).

This "comma of Didymus", as it is also called, was considered by the Greeks, the Arabs and the Hindus as the logical

* See notation-signs, pp. 49–54.

† To represent the proportional ratios of intervals by numbers which can be added together, the easiest method is to take their logarithms. In the most usual system, the octave (2/1) is represented by the log. of 2, i.e. 0.30103, which, multiplied by 1,000 for convenience, gives the division of the octave into 301.03 intervals, or, in practice, 301 intervals which are equal, can be added or subtracted, and are usually called SAVARTS, from the name of the physicist Savart (1791–1841) who advocated this system.

The division of the tempered half-tone into one hundred "cents", sometimes used nowadays, does not allow direct use of logarithm-tables and is besides empirical and musically inaccurate.

unit for any practical division of the scale. Many modern acousticians agree with this view.

The comma ($81/80$) has this peculiarity, that the differences between important simple intervals can almost always be expressed in terms of it. For example, the difference between the major and minor tone $9/8$ and $10/9$ (Sa Ri and Ri Ga) is $9/8 \times 9/10 = 81/80$; the difference between the major half-

tone ($16/15$) and the limma ($256/243$) is $\frac{16}{15} \times \frac{243}{256} = \frac{81}{80}$; the

difference between the two minor thirds (C E_b + * (Sa Ga k+)†

$= \frac{6}{5}$ and C E_bn (Sa Ga k_n) $= \frac{32}{27}$) is $\frac{6}{5} \times \frac{27}{32} = \frac{81}{80}$; the differ-

ence between the harmonic third C E (Sa Ga) $= 5/4$ and the

Pythagorean third C E+ (Sa Ga+) $= 81/64$ is $\frac{81}{64} \times \frac{4}{5} = \frac{81}{80}$,
and so on.

This explains why a scale formed by adding to the twelve notes of the basic scale twelve other notes each raised by one comma, and twelve more each lowered by one comma, will give us practically all the intervals used in music.

The complete division of the octave is, however, attained by adding or subtracting either one or two commas from each of the twelve notes of the basic chromatic scale.‡ This gives us a series of 53 intervals, which cannot all be used in modal scales though they may come into use through modulations (changes of tonic) or in certain forms of polyphony. If we further divide the disjunction which appears at each half-tone of this scale so as to form quarter tones, we obtain the division of the octave (Sa to upper Sa) into 65 intervals—that is, counting the note that forms the octave itself, the scale of sixty-six intervals or śrutis spoken of by Kohalā.

It should be noted that this scale makes use only of two kinds of intervals—commas of 5 savarts and disjunctions of 8 savarts. This is, in fact, besides the Pythagorean division into seven notes, the only possible complete division of the octave which uses only two sorts of intervals and which respects the fundamental consonances (fourth, fifth, etc.).

* See the tuning-signs, pp. 49–54.

† k. means “komalā” (flat) and t. “tivrā” (sharp).

‡ See p. 50.

THE SCALE

All other divisions of the octave are either irregular or, as is the case with all tempered scales, never give perfect consonances.

*The Notation of the Śrutiṣ**

To proceed further with the theory of the śrutiṣ we require an accurate and simple way of writing down exact intervals. The following method of classification has been adopted here as the most simple and convenient.

In order to write the sixty-six intervals of the complete scale, we shall use conventional signs placed beside the notes within the frame of the harmonic form of the chromatic scale,† which is the scale of modal music and which allows only one sort of accidental (either flat or sharp) for each note. This applies to both the European staff and the Indian syllabic notations. Thus, the sign — — after the note means that it is lowered by two commas; the sign — means that the note is lowered by one comma; the sign + means that the note is raised by one comma, the sign ++ that the note is raised by two commas. The sign n (natural) indicates the more usual note, neither raised nor lowered.

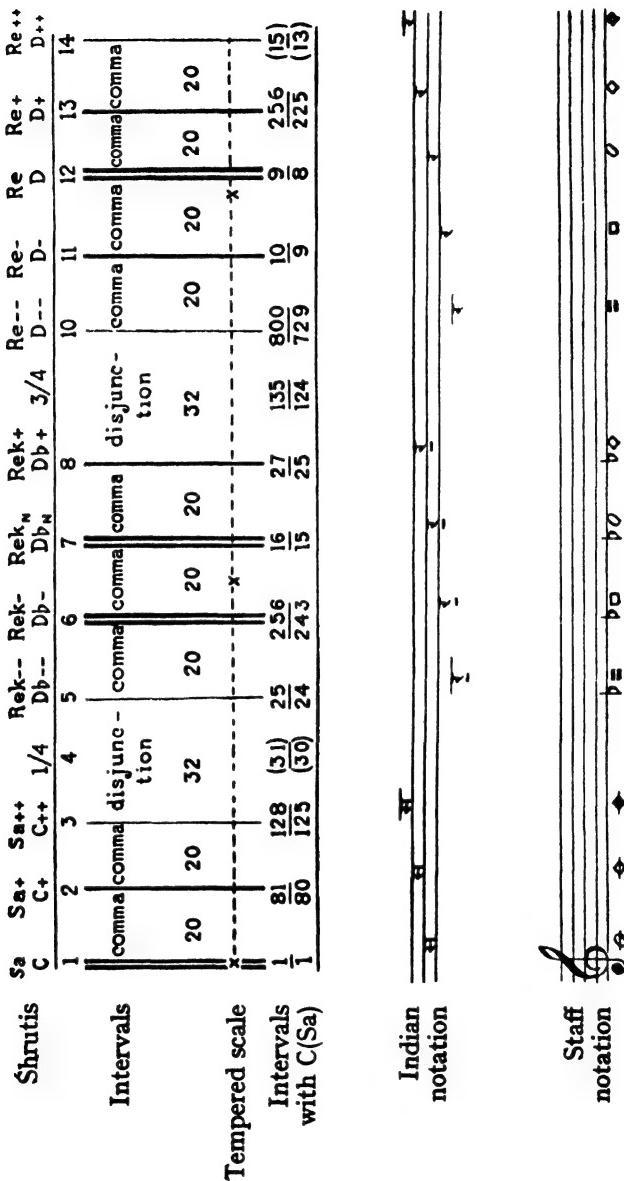
In the following tables we shall leave aside the quarter-tones that divide the disjunctions into two approximately equal parts, since they are never in practice used in Indian music.

* For transcription of the śrutiṣ in the European staff and Indian syllabic notations, see below: Notation of the intervals, p. 80.

† See below, the section on "the Scale", p. 72.

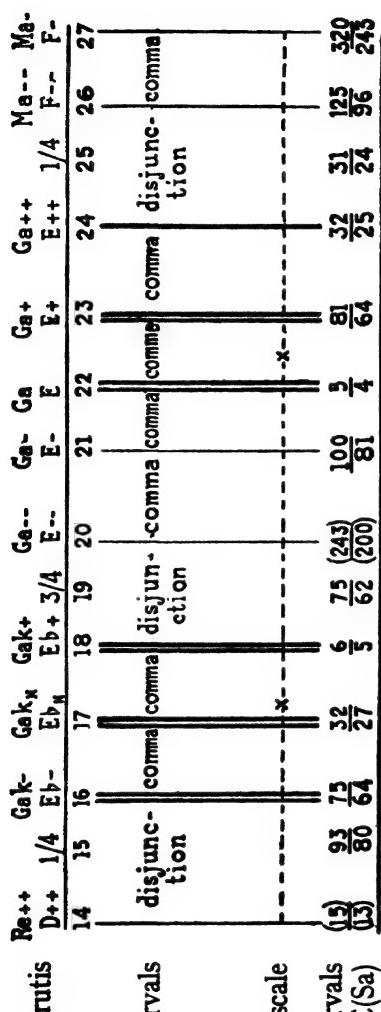
NORTHERN INDIAN MUSIC

*The Sixty-six Shrutis**

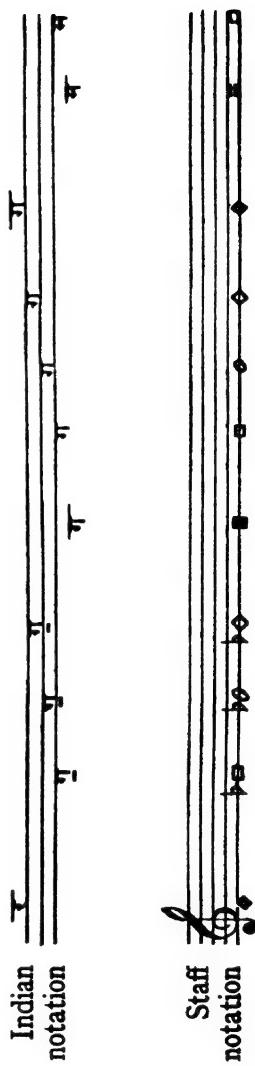


* For explanation of the signs used in the Indian and Western staff notations, see below: "Notation of the intervals", p. 80.

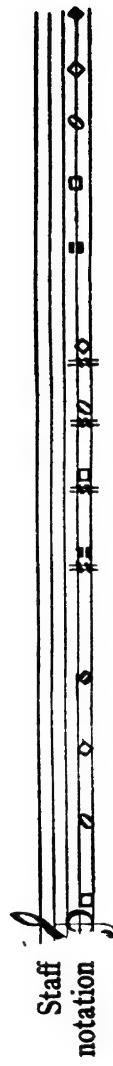
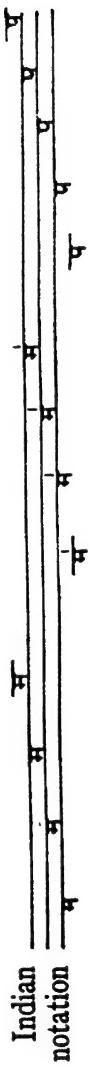
THE SCALE



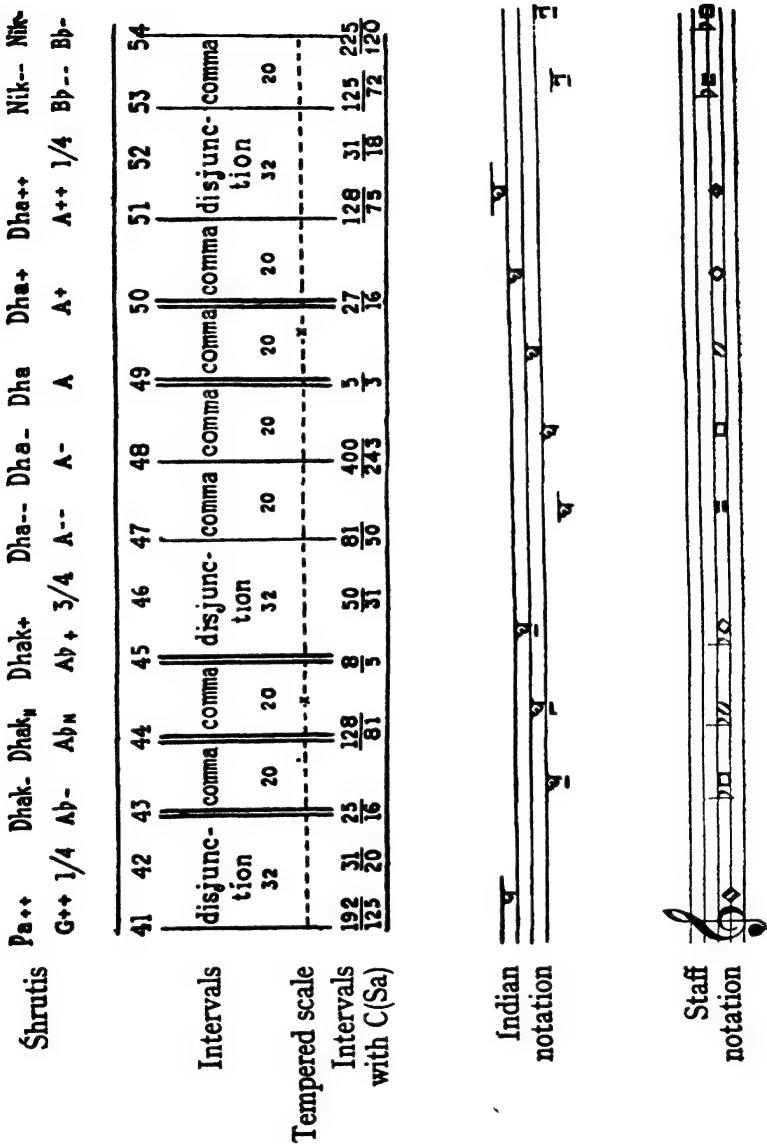
Tempered scale



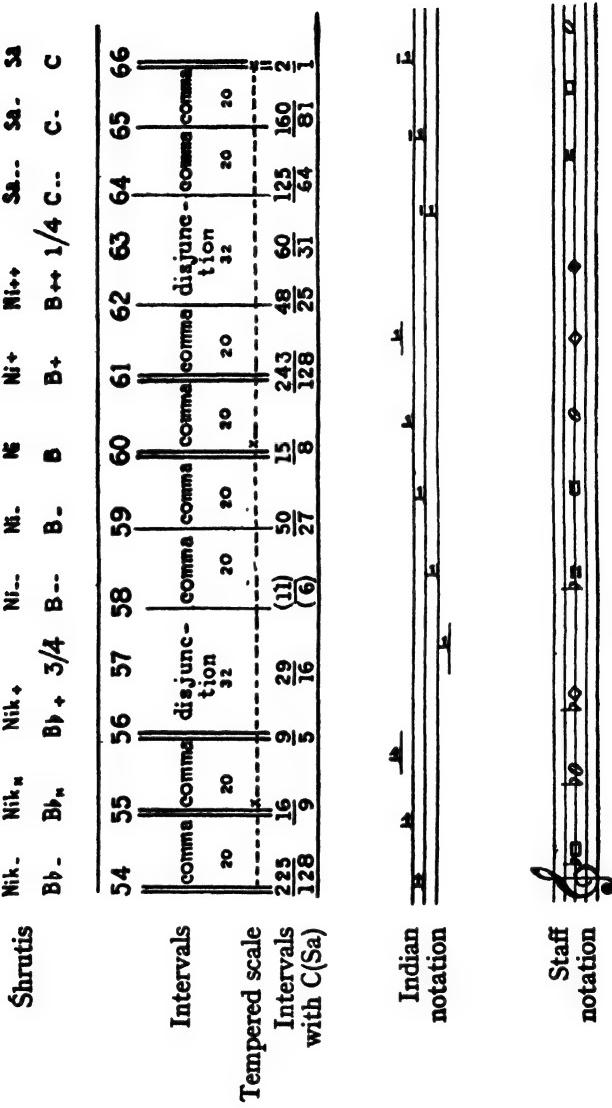
NORTHERN INDIAN MUSIC



THE SCALE



NORTHERN INDIAN MUSIC



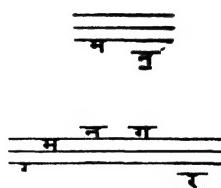
NOTE. The comma is equal to five savarts (or 20 cents); the disjunction equals eight savarts (32 cents); the tempered half-tone twenty-five savarts (100 cents).

THE SCALE

Of these theoretical intervals many, in practice, are very seldom used. The twenty-two (or twenty-four) most prominent intervals, which correspond to obviously distinct expressions and which are used in the teaching of modal music, are usually considered to be the following:

On no grounds can these twenty-two divisions be considered equal. They refer only to twenty-two prominent intervals chosen out of the possible fifty-three (or sixty-six). In modal music a few other intervals are used, though seldom. They are the rare F—
and Bflat— —

and the still more rarely used D—, F+,
B++, E++, Dflat— —



The remaining divisions, necessary only when the tonic is changed, are not considered in modal practice.

As we have already explained, if we add or subtract one comma to or from each of the twelve notes of the fundamental Pythagorean chromatic scale* we get a scale of thirty-six notes which contains practically all the intervals that are used in any form of music.

In this scale each of the twelve notes thus has three positions —low, middle and high. This mode of division of the scale seems to have been used by the celebrated Tumburut† who expresses the strident character of all the raised notes and the mellowness of the lowered ones by connecting them with the

* The Pythagorean chromatic scale has only major tones and limmas. Its third, sixth and seventh are therefore higher by one comma than the same notes of the harmonic scale. The Pythagorean scale is written in our notation:

C	D	E+	F	G	A+	B+	C
Sa	Ri	Ga+	Ma	Pa	Dha+	Ni+	Sa.

The intermediary notes are:

Dflat _n	Eflat _n	Fsharp _n	Aflat _n	Bflat _n
Ri k _n	Ga k _n	Ma t _n	Dha k _n	Ni k _n

† A celestial musician, considered the originator of one of the chief ancient systems of music. He wrote a treatise now lost.

four humours of the body whose relative predominance is said to bring similar tendencies. He says:

"A sound that is high is harsh (piercing). The wise know it to be born from wind.

"A low sound, deep and mellow, should be known as born from bile.

"The attractive (perfect) sound is born from lymph. It is sweet and tender.

"That which has the qualities of all three (the sound with vibrato) is known to be born from semen." (Attributed to Tumburu by Kallināthā, comm. on *Saṅg. Ratn.* 1, 3, 10–16; and to Chaturā in *Brihaddeśī* comm. on 27.)⁴⁰

The Expression of the Shrutis

As we have already seen, the division of the octave into sixty-six intervals is an acoustic division. Although we can clearly perceive the differences in pitch of different intervals and rapidly train our ear to recognize them, only a certain number will correspond with such expressions as are generally used in music. These expressions of the intervals have been carefully classified by ancient writers. Each śruti was given a name depicting its character. In the system of Pārśhvadevā, these names were even different for each octave. These expressions were further classified into five main groups or *Jātis* called "moderate, keen, large, tender, and compassionate". We shall see later what these *jātis* are.

"Diptā (keen), Āyatā (large), Karuṇā (compassionate), Mṛidu (tender), Madhyā (moderate), these are the five kinds (*Jātis*) of śrutis that are found in the notes." (*Saṅg. Ratn.* 1, 3, 27–28.)⁴¹

Because of the confusion that has resulted from changes in scale and in tonic the exact interpretation of the ancient śrutis presents a number of problems which we shall not attempt to discuss here.

The only safe way to interpret the ancient śrutis is to start from the actual expression of the intervals as they are found to exist in present-day musical practice. The notation of these expressions given in the following list has been worked out by careful measuring of the intervals used by musicians playing different rāgās and by noting the expression each particular

THE SCALE

note conveyed to the musician and to his audience. It was found that the same intervals in the most different rāgās always, in themselves, produced the same kind of expression. The scale we give here is only the result of such experiments and may therefore be subject to improvement.

In the following table we also compare the śruttis as they are given by Śāringadevā with the experimental ones. A few slight differences remain to be clarified.

There is some difficulty in ascertaining which of the śruttis of Śāringadevā really was the tonic. This has led to very divergent interpretations. The three main ones start the scale from the śruttis Chhandovatī, Kṣhabhiṇī or even Ramyā—corresponding with Dha (A), which is said to have been the ancient tonic of Nāradā. The *Svarā melā Kalānidhi* (1549 A.D.) takes Chhandovatī as Sa (Tonic) but considers that “Prasūnā”, Nāradā’s first śruti, corresponds with Kṣhabhiṇī. On the other hand, Govindā in his *Saṅgitā Śāstrā Saṅkshepā* (c. eighteenth century) places the tonic Sa on Kṣhabhiṇī.

The śruttis are given by Śāringadevā as follows:

“Tivrā, Kumudvatī, Mandā, Chhandovatī come within Ṣadja;

Dayāvatī, Rañjanī and Raktikā dwell in Riśhabhā,

Raudrī and Krodhā in Gāndhārā,

while the śruttis Vajrikā, Prasāriṇī, Prīti and Mārjanī have their place in Madhyamā.

Kṣhitih, Raktā, Sandipanī and Ālāpinī are in Pañchamā;

Madantī, Rohinī, Ramyā shelter in Dhaivatā;

both Ugrā and Kṣhabhiṇī rest in Niṣhādā.” (*Saṅg. Ratn.* I, 3., 35–39).⁴²

I formerly followed the often admitted interpretation that starts the scale from Kṣhabhiṇī, but closer study of the expressions given by Śāringadevā seems to show beyond doubt that his scale started from Chhandovatī, as seen in the following tables.

NORTHERN INDIAN MUSIC

THE SCALE OF THE SHRUTIS

Note	Actual expression (base)	Ratio from C	<i>Śāringadavā Shrutiś</i> (Type of expression— Jātis)	
			(Name of shruti)	
Sa(C)		1/1	Sa 4 <i>Chhandovatī</i> (measuring)	Madhyā (moderate)
Sa+(C+)	—	81/80		
Ri k— (D♭—)	—	25/24		
Ri k— (D♭—)	sad, pathetic.	{ 256/243	5 Dayāvati (compassionate)	Karuṇā (compassion)
Ri k _n (D♭ _n)	tender, at peace. loving, calm.	16/15	6 Rañjani (charming)	Madhyā (moderate)
Ri k+ (D♭+)	enterprising.	27/25		
58	Ri— (D—)	10/9	Ri 7 <i>Ratiķā</i> (sensual)	Mṛiduh (tender)
	Ri _n (D _n)	9/8		
Ri+ (D+)	fierce.	256/225	8 Raudri (fierce)	Diptā (keen)
Ga k— (E♭—)	—	75/64	Ga 9 <i>Krodkā</i> (passionate)	Āyatā (large)
	sad. loving.	32/27		
Ga k _n (E♭ _n)			10 Vajrikā (thundering)	Diptā (keen)
Ga k+ (E♭+)	passionate.	6/5		
Ga _n (E _n)	calm, pleasing.	5/4	(Antara) Ga ii <i>Prasārinī</i> (pervasive)	Āyatā (large)

THE SCALE OF THE SHRUTIS (*contd.*)

<i>Note</i>	<i>Actual expression</i>	<i>Ratio from C</i>	<i>(Name of shruti)</i>	<i>Śāringadeva Śruti's (type of expression— Jāis)</i>
Ga+ (E+)	awake, lively.	81/64	12 Pṛitih (love)	Mṛiduh (tender)
Ga++ (E++)	hard, indifferent.	32/25		
Ma— (F—)	doubt.	320/243		
Ma _n (F _n)	<i>moonlight, peace.</i>	4/3	<i>Ma 13 Mārijāni</i> (purifying)	Madhyā (moderate)
Ma+ (F+)	intense.	27/20		
Ma t— — (F#— —)	<i>intense grief.</i>	25/18 {	14 Kṣithih (loss)	Mṛiduh (tender)
Ma t— (F#—)	uncertain, doubtful.	45/32 {	15 Raktā (red)	Madhyā (moderate)
Ma t _n (F# _n)	intense, active.	64/45	16 Sandipani	Ayatā (large)
Ma t+ (F#+)	acute, interrogative.	36/25	(inflaming)	
(Pa—) (G—)	inexpressive, self-contradictory.	40/27		
Pa _n (G _n)	<i>sunlight, joyful.</i>	3/2	<i>Pa 17 Ālāpini</i> (conversing)	Karuṇā (compassion)
(Pa+) (G+)	confused, self-contradictory.	243/160		
Dha k— (Ab—)	deep sorrow.	25/16	18 Madanti	Karuṇā (compassion) (maddening)
				.

NORTHERN INDIAN MUSIC

THE SCALE OF THE ŚHRŪTIS (*contd.*)

Note	Actual expression	Ratio from C	Śāringadevā Śrūtis (type of expression— Jātis)	
			(Name of śruti)	Āyatā (large)
Dha k _n (A _{b_n})	tender.	128/81	19 Rohinī	Āyatā (large)
Dha k+ (A _{b+})	loving, enterprising.	8/5	(adolescent)	
Dha— (A—)				
Dha _n (A _n)	<i>uncertainty.</i>	400/243	Dha 20 Rāmyā (restful)	Madhyā (moderate)
Dha+ (A ₊)	<i>soft, calm.</i>	5/3	21 Ugrā (fearful)	Diptā (keen)
(Dha++) (A++)	<i>restless, playful.</i>	27/16		
	<i>hard, active.</i>	128/75		
Ni k— (B _b —)	helpless, subdued.	225/128	Ni 22 Kṣobhīṇī (excited)	Madhyā (moderate)
Ni k _n (B _{b_n})	<i>beauty, love.</i>	16/9	1 Tivrā (sharp)	Diptā (keen)
Ni k+ (B _{b+})	<i>desire, anxiety.</i>	9/5		
(Ni— —) (B— —)	<i>(doubt).</i>	729/400		
(Ni— —) (B— —)	<i>anemish, depression.</i>	50/27		
Ni _n (B _n)	<i>soft, voluptuous.</i>	15/8	(Kākali Ni) 2 Kumudavatī	Āyatā (large)
			(lotus-like)	
Ni+ (B ₊)	strong, sensuous.	243/128	3 Manda (low)	Mṛiduh (tender)
Ni++ (B++)	selfish, eager.	48/25		
Sa— (C—)	—	160/81	Sa 4 Chhandovatī	Madhyā (moderate)
Sa (C)	(base)	1/1	(measuring)	

THE SCALE

*The Theory of the Classes of Intervals (*Śhruti-jātis*)*

As we have explained in another work,* the scale of the śrutis is composed of several series of fifths related by harmonic thirds. Starting from C(Sa), we build five successive ascending fifths and five successive descending fifths (we shall see later why there can be only five). This gives us the series of intervals generally known as Pythagorean.

The five ascending fifths are: G (Pa), D (Ri), A + (Dha +), E + (Ga +), B + (Ni +).

The five descending fifths are: F (Ma), B \flat n (Ni k_n), E \flat n (Ga k_n), A \flat n (Dha k_n), D \flat – (Ri k –).

If now, starting again from C, we descend by an harmonic minor third (6/5), this gives us the A_n (Dha_n) which forms a sixth (5/3) with the lower C, and which is lower by one comma (81/80) than the Pythagorean sixth A + (Dha +) = 27/16 which we obtained before.

If we build up ascending and descending fifths starting from this harmonic A_n (Dha_n), they will all naturally fall one comma below those of the basic series. This new series gives us: E (Ga), B (Ni), F \sharp – (Ma t –), D \flat – (Ri k –), etc.

If again we base an harmonic minor third on A_n (Dha_n), we obtain F \sharp – – (Ma t – –) = 25/18, basis of a series of fifths two commas below those of the basic series, thus: D \flat – – (Ri k – –), A \flat – (Dha k –), E \flat – (Ga k –), B \flat – (Ni k –).

And if, starting again from C (Sa), we ascend by an harmonic minor third, we obtain the high E \flat + (Ga k +) 6/5, the basis of a series of fifths all one comma higher than those of the basic series, thus: A \flat + (Dha k +), D \flat n (Ri k_n), F \sharp n (Ma t_n), B + (Ni +).

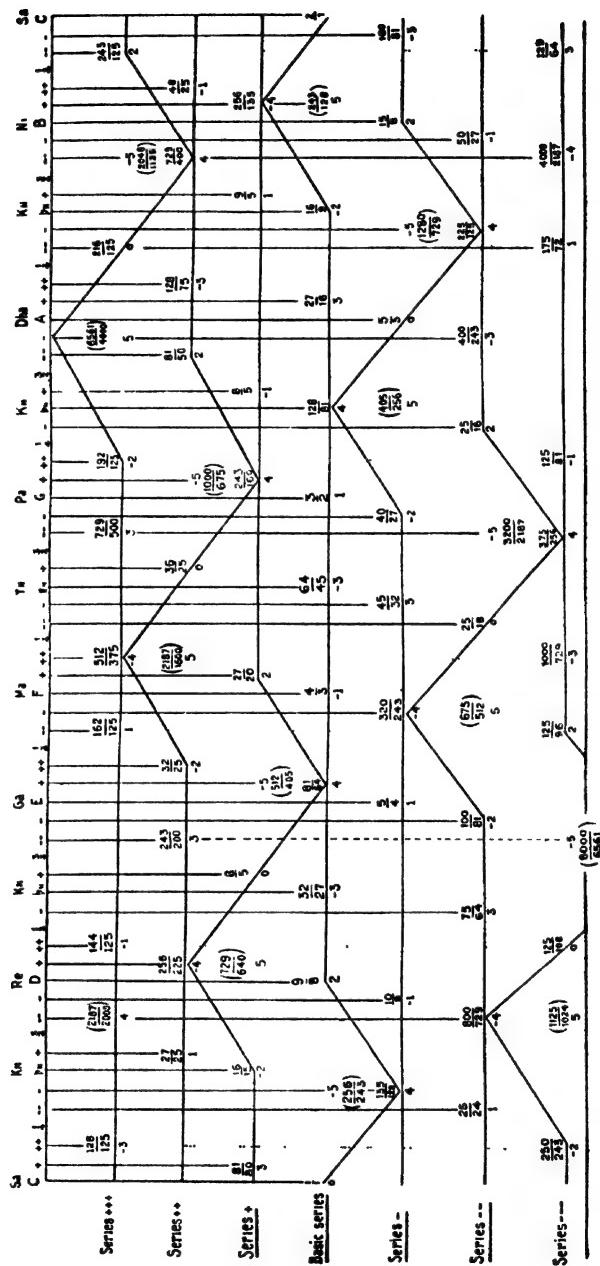
Similarly, an ascending harmonic minor third from E \flat + (Ga k +) gives F \sharp + (Ma t +) 36/25, the base of a series of fifths two commas higher than those of the basic series, thus: B + + (Ni + +), E + + (Ga + +), A + + (Dha + +), D + (Ri +).

We shall see more clearly below that each of these series is based upon a certain *type* of ratio, and that the notes of each series correspond with a certain type of emotion. There is, then, a direct relation between intervals, determined by strictly physical laws, and the emotions they arouse or express. This fact is the very ground of music. Once we know

* *Introduction to the Study of Musical Scales*, pp. 232–235.

NORTHERN INDIAN MUSIC

THE SERIES OF FIFTHS
AND THE 66 ŚHRUTIS



THE SCALE

the type of ratio that corresponds with certain emotion, we can tell at once what emotion a given interval must express by merely looking at the ratio with which it corresponds: we do not need to hear it.

Starting from Sa (C) $\frac{I}{I}$ which is strictly neutral, the ascending fifths are all of the form $3/2$, i.e. ratios formed with 3 and its multiples divided by multiples of 2. Thus: G (Pa) = $3/2$, D (Ri) = $9/8 = 3^2/2^3$, A+ (Dha+) = $27/16 = 3^3/2^4$, E+ (Ga+) = $81/64 = 3^4/2^6$, B+ (Ni+) = $243/128 = 3^5/2^7$.

These intervals are said to represent the "active principle": they all express sunshine, strength and joy.

If, in the same series, we take the descending fifths from Sa (C), these are all of the form $2/3$. Thus F (Ma) = $4/3 = 2^2/3$, B_bn (Ni k_n) = $16/9 = 2^4/3^2$, E_bn (Ga k_n) = $32/27 = 2^5/3^3$, A_bn (Dha k_n) = $128/81 = 2^7/3^4$, D_b- (Ri k-) = $256/243 = 2^8/3^5$.

These intervals represent the "passive principle": they all express moonlight, beauty, peace.

In this basic series the expressions remain of a general character: they are said to be of the cosmic order. Their ratios never use a prime number higher than three.

In the next series a new element appears, the prime number 5. And we shall discover that whenever 5 appears as a constituent of the numerator, the interval whose ratio is so expressed conveys tenderness (that is, passive reaction to the outer world). And whenever it appears as a constituent of the denominator, the interval whose ratio is so expressed conveys passion (active reaction to the outer world).

The basic interval of the series — (minus) is A (Dha) $5/3$, which expresses sensitiveness, emotion. The ascending fifths will be E_n (Ga_n) $5/4 = 5/2^2$, B_n (Ni_n) $15/8 = 5 \times 3/2^3$, F#— (Ma t-) $45/32 = 5 \times 3^2/2^5$, D_b— (Ri k-) $135/128 = 5 \times 3^3/2^7$. These will all show the same character, though the growing influence of $3/2$ will bring in its own element of activity.

The descending fifths [D— (Ri-) $10/9 = 5 \times 2/3^2$, G— (Pa-) $40/27 = 5 \times 2^3/3^3$, C— (Sa-) $160/81 = 5 \times 2^5/3^4$, F— (Ma-) $320/243 = 5 \times 2^6/3^5$] enhance the already receptive, sensitive character of the series —; in fact the passive character of the descending fifth, when added to that of the number 5 in the numerator, gives intervals so exaggeratedly

NORTHERN INDIAN MUSIC

passive and characterless that they are rarely used in music.

The basic interval of the series + (plus) is $E\flat +$ (Ga k+) $\frac{6}{5} = 2 \times \frac{3}{5}$ which expresses passion, desire. The ascending fifths built upon it add their activity to the active character produced by the number 5 in the denominator and thus create exaggeratedly acute intervals which, except for the first one, where the element 2 does not appear, are rarely used in music

$[B\flat +$ (Ni k+) $\frac{9}{5} = \frac{3^2}{5}$, $F +$ (Ma +) $\frac{27}{20} = \frac{3^3}{5} \times \frac{2^2}{5}$, $C +$ (Sa +) $\frac{81}{80} = \frac{3^4}{5} \times \frac{2^4}{5}$, $G +$ (Pa +) $\frac{243}{160} = \frac{3^5}{5} \times \frac{2^5}{5}]$.

The descending series, on the other hand, combining passion $\left(\frac{n}{5}\right)$ and beauty (descending 5ths), is lively and charming. Its intervals are $A\flat +$ (Dha k+) $\frac{8}{5} = \frac{2^3}{5}$, $D\flat_n$ (Ri k_n) $\frac{16}{15} = \frac{2^4}{5} \times \frac{3}{5}$, $F\sharp_n$ (Ma t_n) $\frac{64}{45} = \frac{2^6}{5} \times \frac{3^2}{5}$, $B +$ (Ni +) $\frac{256}{135} = \frac{2^8}{5} \times \frac{3^3}{5}$.

We see that the fifth ascending fifth of the basic series and the fourth descending fifth of the series + give two intervals almost identical: $B +$ (Ni +) $\frac{243}{128}$ and $B +$ (Ni +) $\frac{256}{125}$. The first is of 278.14 savarts, the second of 277.91. The difference is 0.23 of a savart, that is less than 1/20th of a comma or 1/200th of a tone—a very small quantity indeed. Any further fifths in these two series will therefore be practically identical. The same applies to the fifth descending fifth of the basic series, $D\flat -$ (Ri k -) $\frac{256}{243}$, and the fourth ascending fifth of the series -, $D\flat -$ (Ri k -) $\frac{135}{128}$. The same happens, in fact, with every series, so that the number of possible distinct intervals in each series can never be higher than five.

If we now proceed with the series two commas above and two commas below the basic series, we have the series ++ characterized by $\frac{n}{25}$, i.e. 5^2 in the denominator. This expresses harshness, brutality, insensitiveness; while the series --, characterized by $\frac{25}{n}$, or 5^2 in the numerator expresses intense depression or sadness.

The intervals of the series ++ are not as a rule employed because the kind of sentiments they express are not those we

THE SCALE

THE CLASSES OF ŚHRUTIS (ŚHRUTI-JĀTIS)

BASIC SERIES (COSMIC)

O = Sa 1 centre, Earth, etc (yellow)

Descending fifths (Passive ॥)

-1 F (Ma) $4/5 = 2^{1/2}$	Moonlight peace, passivity (white)
-2 B (Ni Ma) $16/9 = 2^{1/2}$	beauty, loveliness
-3 E (Ra Ga) $32/27 = 2^{1/2}$	tender, loving, expectant
-4 A (Ra Da Ra) $128/81 = 2^{1/2}$	submissive, passive, expectant
(-5 D) (Ra Ni) $256/162 = 2^{1/2}$	tenderness, charm, devotion)

Descending fifths (Passive ॥)

Ascending fifths (active ॥)	
1 G (Pa)	3/2
2 D (Re)	$9/8 = 3^{1/2}$
3 A (Ra Re)	$27/16 = 3^{1/2}$
4 E (Ga)	$64/45 = 3^{1/2}$
(5 B) (Na)	$128/81 = 3^{1/2}$

Series+ (active emotion, passion ॥)

Ascending fifths	
O = E+	$(Ge +) 6/5 = 2^{1/2}$ passion, desire
1 B (Ra)	$18/15 = 2^{1/2}$ loving, passionate
2 D (Re)	$16/15 = 2^{1/2}$ loving, confident
3 F (Ra Re)	$48/45 = 2^{1/2}$ active, promising, intense
4 A (Ra)	$135/128 = 2^{1/2}$ boldness, desire, pleasure
(5 E (Ge))	$335/315 = 2^{1/2}$

Series+ (active emotion, passion ॥)

Descending fifths	
O = A (Ra)	enjoyment, satisfaction
1 D (Ra)	$15/14 = 1^{1/2}$ soft, pleasing
2 B (Ra)	$158/154 = 1^{1/2}$ soft, voluptuous
3 F (Ra)	$45/42 = 1^{1/2}$ attractive, ambiguous
4 A (Ra)	$128/125 = 1^{1/2}$ tender charming, devoted
(5 E (Ra))	$405/392 = 1^{1/2}$

Series- (passive, emotion, enjoyment, satisfaction ॥)

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Series-- (Depression, sadness, distressful ॥)

Ascending fifths	
O = F #-(Ma,-) $25/18 = 2^{1/2}$ distressful	
1 B (Ra)	$15/12 = 2^{1/2}$ intense sadness
2 A (Ra)	$25/24 = 2^{1/2}$ despair, intense sadness
3 F (Ra)	$75/64 = 2^{1/2}$ sadness, melancholy
4 A (Ra)	$225/192 = 2^{1/2}$ hopeless, subdued
(5 E (Ra))	$675/576 = 2^{1/2}$ dull, melancholy

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Series++ (Harshness, intensity ॥)

Ascending fifths	
O = F #-(Ma,-) $25/18 = 2^{1/2}$ harsh, indifferent	
1 B (Ra)	$15/12 = 2^{1/2}$ selfish, hard
2 A (Ra)	$25/24 = 2^{1/2}$ hard, indifferent
3 F (Ra)	$75/64 = 2^{1/2}$ unconscious, insensitive
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Series++ (Harshness, intensity ॥)

Descending fifths	

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usually ask from music. In any case, as it was in the series +, only the descending fifths convey clear meaning, for the ascending fifths create confusion by superimposing their active character upon the already extreme activity of the series. This series thus gives us $F\# + (\text{Ma t}+) \frac{36}{25} = 3^2 \times 2^2/5^2$, $B++ (\text{Ni}++) \frac{48}{25} = 3 \times 2^4/5^2$, $E++ (\text{Ga}++) \frac{32}{25} = 2^5/5^2$, $A++ (\text{Dha}++) \frac{128}{75} = 2^7/5^2 \times 3$, $D+ (\text{Ri}+) \frac{256}{225} = 2^8/5^2 \times 3^2$.

The intervals of the series —, on the other hand, are among the most beautiful in music and deeply move the heart. Only the ascending fifths are used, for, as it was in the series —, the descending fifths lead to confused meanings by superimposing their passive character upon that of the series. We thus have $F\# -- (\text{Ma t}--) \frac{25}{18} = 5^2/3^2 \times 2$, $D\flat -- (\text{Ri k}--) \frac{25}{24} = 5^2/3 \times 2^3$, $A\flat -- (\text{Dha k}--) \frac{25}{16} = 5^2/2^4$, $E\flat -- (\text{Ga k}--) \frac{75}{64} = 5^2 \times 3/2^6$, $B\flat -- (\text{Ni k}--) \frac{225}{128} = 5^2 \times 3^2/2^7$.

By comparing their ratios we can at once precisely analyse the subtle differences of expression between these intervals. We can see for example that $A\flat -- (\text{Dha k}--) 5^2/2^4$ will be pure, absolute, immense sadness, while $E\flat -- (\text{Ga k}--) 5^2 \times 3/2^6$ will temper this sadness by some sunshine ($3/2$), some ray of hope.

If we add a few elements of either a series + ++ or a series — — which are not used in musical practice, we can complete the cycle of intervals, leaving no room for any new shruti.

Here too it should be noted that whenever a common interval appears in two of the series, the constituents of the ratios which form the two almost identical intervals come to represent the same expression through two different channels. For example, if we compare the $B+ \frac{243}{128}$ of the basic series and the $B+ \frac{256}{135}$ of the series +, we should first note that $256 = 2^8 = 128 \times 2$, $243 = 3^5$, $135 = 5 \times 3^3$.

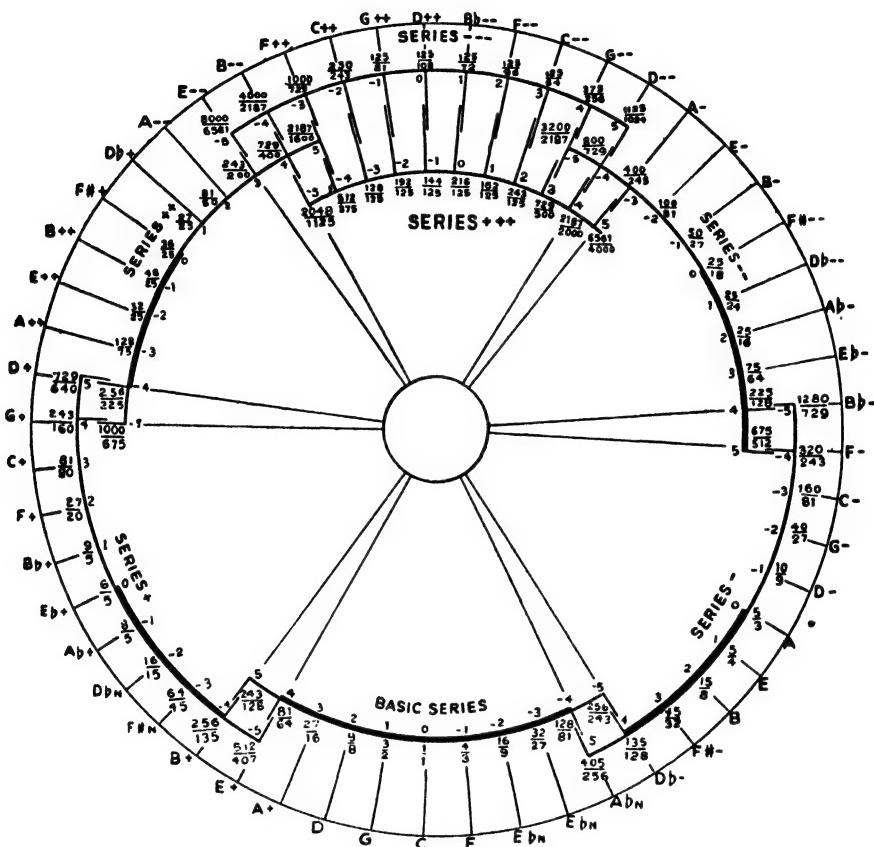
In one case we have $243/128 = 3^5/2^7$, that is the fifth degree (the most materialized degree) of $3/2$ joy, activity.

In the other case $256/135 = 2^8/5 \times 3^3$, that is the expression of $2^3/5$ ($A\flat +$ i.e. passion, love), sobered by the expression of $2^5/3^3$ ($E\flat n$), tenderness, expectancy.

Both lead to the same expression: boldness, desire, pleasure.

THE SCALE

THE CYCLE OF THE ŚHRUTIS



A thicker line shows the groups of intervals normally used in modal music.

It will be observed that the intervals of two series corresponding with the same note show peculiar analogies. The denominator of the lower series (multiplied by 2) usually forms the numerator of the corresponding interval in the higher series.

The corresponding intervals in the series + and -, ++ and --, etc., are always the exact inverted form (multiplied or divided by 2) of one another, and thus give opposite expressions.

The peculiar leap of the fifth element of each series into an interval belonging to a higher or lower series has many implications in the philosophy of sound and of numbers, as well as special applications in the domain of physics, with which we hope to deal in some other work.

The cycle of intervals gives us a division of the octave into fifty-three. This exactly corresponds with the number of letters in the complete phonetic alphabet of Sanskrit grammarians. This is based on five places of articulation, to each of which corresponds a vowel (which can be long or short), a nasal and four consonants (corresponding with a pushing effort and a stopping effort, both of which can be dry or aspirate). To these are added all further possible mixed vowels, sibilants, etc., to a total of fifty-two letters. Over and above these is counted the sacred syllable (AUM) considered the origin and end of all the rest and corresponding with the Sa (C) of music which has a similar function with regard to all the other śruti-s.

Musical sounds therefore number fifty-three, though the disjunction of eight savarts at each half-tone is usually theoretically divided into two to form the sixty-six-śruti scale. Thus the laws that govern musical and articulate sound are strictly parallel and interdependent, both kinds of sound serving, though on different planes, to manifest ideas.

Since the series + + is not usually used in music, five other series of five intervals each (more or less), remain at our disposal. These are the ascending and descending basic series, the ascending series —, the descending series + and the series — —. These five groups of sounds, we have already seen, were known to ancient Indian music as the five śruti-jātis or classes of intervals.

Śāringadevā gives them the following ancient names:

Madhyā (moderate): basic series ascending

Āyatā (large): basic series descending

Mṛidu (tender): series —

Karunā (pathetic): series — —

Diptā (fiery): series +

The expression conveyed by these different classes of intervals has nothing arbitrary about it but corresponds with physical facts upon which all music depends. They are used everywhere, though more or less instinctively, by good singers or players of stringed instruments.

THE SCALE

The fact that the division of śrutiś given by Śāringadevā does not exactly correspond with the one we have arrived at should not surprise us, for as we have already seen, the *Saṅgītā Ratnākarā* presents a mixture of elements from different systems brought together rather haphazardly, and its conclusions are therefore not always reliable.

The Scale

ग्रामः स्वरसमूहः स्पादः

"The scale (grāmā) is the collection of the notes" (*Saṅg. Mak.* I, 49; *Saṅg. Ratn.* I, 4, 1; *Saṅg. Darp.* I, 95).

A scale is not a group of sounds arbitrarily chosen. The building of any scale involves physical laws which are necessarily respected by all men at all times. It is only through disregard of the natural intervals, resulting from a temporary perversion of taste, that, from time to time, people try to construct arbitrary musical systems or instruments which do not abide by the laws of physics. But such systems, like that of Aristoxenes for example, always finally give way before the fundamental laws of consonance which are the basis of all music.

A scale is formed, not as a more or less regular succession of ascending or descending notes, but first of all as a frame defined by the most perfect consonances, the gaps in it being gradually filled with less and less perfect intervals.

We start, therefore, with the octave, representing the relation of the full to the half string length, or the ratio of vibration 2/1. Then come the two intervals of fifth and fourth representing respectively the relation of a full string to two-thirds and three-quarters of its length, or the ratios of vibration 3/2 and 4/3.

These three intervals, octave, fifth and fourth, form the fixed frame C F G C (Sa Ma Pa Sa). They divide the octave into two main limbs or "aṅgāś"—C F and G C (Sa Ma and Pa Sa) separated by a major tone F G (Ma Pa) = 9/8. These two parts of the octave were known to the Greeks as "tetrachords" because, with two notes more within each of them, they formed the two four-stringed halves of the octave.

If, to fill each of the tetrachords, we take the most consonant

NORTHERN INDIAN MUSIC

intervals (those composed of simple ratios involving prime numbers not higher than 5), we obtain the basic harmonic scale of seven notes:

C I I	D 9 8	E 5 4	F 4 3	G 3 2	A 5 3	B 15 8	C 2 1
Sa	Ri	Ga	Ma	Pa	Dha	Ni	Sa

There is, however, an alternative division. This consists in substituting for E (Ga) 5/4 and B (Ni) 15/8, E \flat (Ga komală) 6/5 and B \flat (Ni komală) 16/9 respectively. This gives the scale:

C	D	E♭	F	G	A	B♭	C
I	$\frac{9}{8}$	$\frac{6}{5}$	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{5}{3}$	$\frac{16}{9}$	$\frac{2}{1}$
Sa	Ri	Ga k.	Ma	Pa	Dha	Ni k.	Sa

If both scales are taken together, we get the basic scale of nine notes as it was used in ancient North Indian music.*†

* These divisions form what is known as the Diatonic divisions of the scale, because each tetrachord contains two full tones.

There is, however, another division, known to the Greek theorists as the Chromatic, which still forms the basic scale of South Indian music. In this scale each tetrachord contains two semi-tones and one minor third:

	C	D \flat	D	F	G	A \flat	A	C
I	16	9	4	3	3/2	8	5	2
I	15	8	3			5	3	1
North Indian:	Sa	Ri k.	Ri	Ma	Pa	Dha. k.	Dha	Sa
South Indian:	Sa	Ri	Ga	Ma	Pa	Dha	Ni	Sa

In this system the two additional notes called *Antarā Ga* and *Kākali Ni* are E (Ga) 5/4 and B (Ni) 15/8, giving the complete scale of nine notes.

C	D ♭	D	E	F	G	A ♭	A	B	C
I	I6	9	5	4	3	8	5	I5	2
I	I5	8	4	3	2	5	3	8	I
North Indian: Sa	Ri k.	Ri	Ga	Ma	Pa	Dha k.	Dha	Ni	Sa

This scale does not concern us here, since it is never used as a basic scale.

This scale does not concern us here since it is never used as a basic scale in North Indian Music.

[†] The Sanskrit books generally define notes not by string-lengths but rather by their expression, their shruti, which is the easiest way for trained musicians to recognize them.

The *Sāṅgītā Pārijāta* and *Hṛidayā Kautukā* do however attempt to give the relative string-lengths of the different notes.

THE SCALE

In the system known as Pythagorean, which is based exclusively on a succession of fifths and in whose ratios the prime number 5 never appears, the harmonic third E (Ga) $5/4$ and the harmonic 6th and 7th, A (Dha) $5/3$ and B (Ni) $15/8$, are raised by one comma to give A+ (Dha+) $27/16$, which is the perfect fifth from D (Ri) and, consequently, the E+ (Ga+) $81/64$ perfect fifth from A+ (Dha+) and the B+ (Ni+) $243/128$ perfect fifth from E+ (Ga+).

The basic Pythagorean scale of seven notes is thus:

C	D	E +	F	G	A +	B +	C
$\frac{1}{2}$	$\frac{9}{8}$	$\frac{81}{64}$	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{27}{16}$	$\frac{243}{128}$	$\frac{1}{1}$
Sa	Ri	Ga +	Ma	Pa	Dha +	Ni +	Sa

This gives us two forms of natural basic scale, founded upon the difference of one comma ($81/80$) in A (Dha) (the ancient Pañchamā G). The comma, as we have already seen, was taken as the unit of measurement of the scale.

The larger intervals between the notes of the seven-note scale are further divided to form half-tones. This gives us a division of the octave into twelve half-tones. But, as in the case of the seven main notes, several intervals, several śrutis, offer themselves. If we choose always the more consonant, we obtain a basic division of the octave into twelve notes which we may call the basic chromatic scale.

Without changing anything in the seven- (or nine-) note scale, but changing the note chosen as starting-point, we obtain several basic scales. Such changes happen periodically, and this is how the scale considered as unaltered (śhuddhā) has changed several times in the course of history. Great caution is therefore needed in interpreting the scales given in ancient treatises.

The unaltered scale of modern North Indian music is the basic harmonic scale of seven notes. It is approximately the scale of Rāgā Bilāval, and is usually known by this name. It corresponds with the major mode of Western music.*

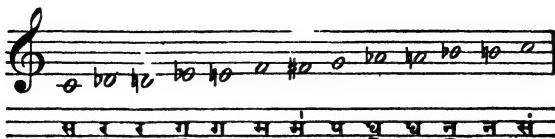
In this scale the intermediary sounds are considered as modifications of the seven main ones. These modifications are always conceived within the frame of the harmonic form of

* The major mode, or Rāgā Bilāval, was first taken as the unaltered scale in the *Sāṅgītā Sārā* (compiled at Jaipur between 1779 and 1804) and in the *Nāgmat-e-Asaphi* of Muhammad Rezza in 1813.

NORTHERN INDIAN MUSIC

the chromatic scale, in which each note can be altered only in one direction—either flattened or sharpened.

The harmonic form of the chromatic scale thus gives the twelve chromatic notes as:



It should not be forgotten, however, that the altered (*vikṛitā*) notes, and also certain of the unaltered (*śhuddhā*) ones, are susceptible to slight changes of pitch according to their expression or *śhruti*.

Besides the division of the octave into twenty-two or sixty-six *śrutis*, which corresponds with what the ancient Greeks called the enharmonic division, and which they considered, as Hindus also do, the basic division of the scale, there thus exist in Indian music—indeed in all music—two main divisions of the octave—one (Diatonic) into seven notes, the other (Chromatic) into twelve. *Mataṅgā* says:

“Modal scales (*mūrch’hanās*) are of two kinds—the scales of seven notes or the scale of twelve.” (*Bṛihaddeśī*, comm. on 1, 95.)⁴³

The Three Basic Scales (Grāmās)

ग्रामो हौ पद्मपञ्चमौ ।
कंचिद् गान्धारवर्षादुः स (तु) नेहोपलभ्यते ॥

“There are two scales—that of Śhadjā (C) and that of Madhyamā (F). Some also mention the scale of Gāndhārā (E) which is not, however, to be found in this world.” (*Dattilam*, II.)

In ancient music three basic scales or grāmās were used. Each was named after its main note (which was not necessarily its tonic).* A difference of tonic was not and could not be

* The Ga grāmā (scale of E; modern scale of F, Ma) was said to start from Pa (modern Dha, A).

“The modal scale (*mūrch’hanā*) of Śhadjā grāmā is Sa, Ri, Ga, Ma, Pa, Dha, Ni.

“The modal scale of Madhyamā grāmā is Ma, Pa, Dha, Ni, Sa, Ri, Ga.

“The modal scale of Gāndhārā grāmā is Pa, Dha, Ni, Sa, Ri, Ga, Ma.” (*Saṅgitā Dāmodarā* I, 40–41.)⁴⁴

THE SCALE

their essential difference, for each of the notes in these scales could, successively, be taken as starting-point, thus forming plagal scales or mürch'hanās which were further used as the basis of the modes. As we have already seen, the two main basic scales, the harmonic and the Pythagorean, are differentiated by the raising or lowering by one comma of the sixth note, the A (Dha) (ancient Pañchamā). This is also exactly the differentiation made in the *Nātyā Śāstrā* between the two main ancient basic scales, the Śadja and Madhyamā grāmās. For the ancient Hindus, as for Pythagoras, the main scale seems to have been the one we call Pythagorean: in Indian music, it is called Śadja grāmā, or scale of C (in the modern scale it is the scale of D, Ri). This is probably because its structure is determined by the perfect ascending fifth D A + (Ri Dha +), based upon D (Ri).

The second or harmonic scale was obtained by lowering the A + (Dha +) (ancient Pa) into A(Dha). This was known as the Madhyamā grāmā, or scale of F (in the modern scale it is the scale of G Pa), its basic interval being the perfect descending fifth D G (Ri Pa).

The third basic scale known in ancient times (it is said to be used by celestial beings) was called Gāndhārā grāmā (scale of E, modern scale of F, Ma). In the surviving texts its nature is never explained in sufficient detail. There is a certain likelihood that it was based upon ratios in which the prime number seven predominates. Such a scale is said to have magical properties.

Since medieval times the differentiation of the grāmās has, in practice, been abandoned and all the scales have come to be considered as modifications of the one Śadja grāmā,* particularly since the note Śadja itself became the universal tonic, and the basic notes of the grāmās came to be taken as their tonic. Hence:

“All worldly music (deśī) comes from the Śadja grāmā.”
(*Svar. Kal.* 5, 17.)⁴⁷

* “The basic scales (grāmās) formed by the different arrangements of the svarās are said to be three. They are known by the names Śadja(C), Madhyamā (F) and Gāndhārā (E). They are the basis of modal scales (mürch'hanās) and the Śadja grāmā is the most perfect of the three. The modes obtained in the two other grāmās are derived from the Śadja grāmā.” (Ahobala, *Saṅgītā Pārijātā*, 97–98).⁴⁸

“The Gāndhārā and Madhyamā grāmās are considered to be out of use. Their definitions are given only so that they may not be mistakenly re-invented.” (*Rāgā-tattvā Vibodhā*).⁴⁹

"The modal scales begin from C (Sa) in the middle octave."
(*Śh. tat. Ratn.* VI, 7, 47.)⁴⁸

The three notes chosen as the basis of the three grāmās—D, G, F (Ri, Pa, Ma) are those which, besides the tonic, never, in modal music, bear alteration of one comma, as do all the other notes. These three, therefore, are fixed points in all scales and no confusion can arise when intervals are measured in relation to them. This, for two of them, is remarked by Matangā:

"Why is it that the basic scales (grāmās) are called by the names of Śadja (C) and Madhyamā (F)? They are so called because these two notes are never altered. It is because they are never altered that they are said to belong to the kin of the Gods." (*Brihaddeśhī*, comm. on 92; also quoted by Simh. comm. on *Saṅg. Ratn.* I, 4, 6–8.)⁴⁹

Flats and Sharps

As we have seen, all notes distinct from the seven notes of the basic scale are considered modifications of them. And since, between two notes, there are several intermediary sounds, these modifications are necessarily of different kinds.

"When a note rises by one interval (śruti), it is called "tīvrā" (sharp). If it rises by a further śruti it becomes "tīvratarā" (very sharp). If the note rises by still one more śruti, it becomes "tīvratamā" (extremely sharp), and when it is raised by four śrutis, the sages say that it takes the name of "ati-tīvratamā" (extra extremely sharp).

"If a note is lowered, it is called komalā (flat); when it is lowered by one śruti it is komalā, but if it is lowered by two śrutis it is called 'pūrvā'." (Pūrvā is now called ati-komalā.) (*Saṅgītā Pārijātā*, 68–71.)⁵⁰

In most cases, this means that a note raised by a minor half-tone (25/24) is said to be sharp (tīvrā), by a limma (256/243) "very sharp" (tīvratarā); by a major half-tone (16/15) "extremely sharp" (tīvratamā).

Similarly, a note flattened by a half-tone equal to one śruti (usually the minor half-tone, 25/24), is said to be "komalā" (flat) and when it is flattened by a larger half-tone (the limma, 256/243, or the major half-tone, 16/15) it is said to be "ati-komalā" (extremely flat).

THE SCALE

Since this classification, though exact, may sometimes be misleading because of the different intervals represented by the śrūtis, we shall use here, as is often done, only the more general terms komală (flat) and tīvră (sharp); the tuning symbol, and the notation itself, will always show exactly which sort of flat or sharp is being used.

The Three Main Octaves (Saptakas)

Music is mainly developed within three octaves. In singing, they correspond with the resonance of chest, throat and head. These three octaves are called "low" (mandră), "medium" (madhyă) and "high" (tāră).

"In practice there are three (octaves in singing)—the lower one (resounding) in the chest, the middle one in the throat and the higher one in the head. Each being the double of the other." (*Saṅg. Mak.* 4, 19 and *Saṅg. Ratn.* I, 3, 7.)^{51*}

To represent these octaves in Indian notation, we will use, as is often done, a dot above the note for the higher octave

() and a dot below for the lower octave (), the middle octave being left as it is (). For the second higher octave two dots above will be used, and for the second lower octave two dots below.

* Similarly:

"[The octaves are] in order: 'low octave' in the heart, 'middle octave' in the throat, 'high octave' in the head." (*Saṅg. Darp.* I, 49).⁵²

And:

"The lower octave has its place in the chest, the middle octave in the throat, the high octave in the forehead. Although they are similar, each is respectively the double of the preceding one." (*Nāradā Samhitā.*)⁵³

PART II
TECHNIQUE

CHAPTER IV

NOTATION

The Elements of Music

BEFORE we can proceed to the study of the different modes or rāgās, we must analyse in detail the various elements used in music and find a suitable method for writing them down.

In modal music, as we have seen, absolute pitch, that is the frequency of the sound-vibrations, is first considered, and then the relative pitch of the sounds, that is their relation with a given sound chosen as tonic. Further, all the sounds employed within the octave will be considered as modifications of seven main sounds or svarās.

These sounds can be soft or loud, they can be approached in different ways and variously ornamented, they can follow one another according to various sequences and rhythms.

To express all these intricacies in writing, a mode of notation has to be evolved.

Several ways of writing music have been used in different countries at various periods of history. In the system of notation adopted here there is almost nothing new. The ancient Indian method of notation has been fully used and only elements that were found inadequate or missing have been borrowed from other existing musical systems, so as to avoid, as far as possible, all innovation.

Notation of the Intervals (the Śrutiś)

For facility of execution (preferably on an Indian keyboard,* until the ear is trained to play them accurately on a stringed instrument), we have adopted for the śrutiś the following notation (C being always the tonic):

* That is any keyboard, such as the Visva Bharati's Śruti Venu, designed to produce the exact intervals used in Indian music (as shown on p. 50-54).

NORTHERN INDIAN MUSIC

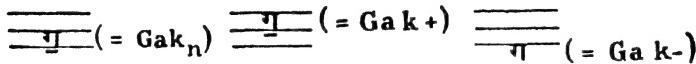
I. In staff notation.

The notes of the diatonic series based upon C are written, as usual,  . Notes lowered by one comma are written  . Those raised by one comma are written  . The rare notes raised by two commas are written  , those lowered by two commas  . Thus the notation of the notes in ordinary use is:

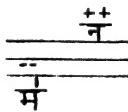


II. In the Indian syllabic notation, a triple line is used.

The notes of the ordinary harmonic scale based upon Sa (C) are written on the middle line, notes lowered by one comma on the lower line, notes raised by one comma on the higher line, thus:



Additional lines can be added for the rare notes raised or lowered by two commas:



Thus the notation is:



GENERAL NOTATION I

Staff notation

Once the notes on any instrument have been tuned to the proper intervals (*shrutis*) for a given mode, very few additional

NOTATION

signs are necessary to write the themes of Indian music in staff notation. The additional signs adopted here are the following:

(a) *Glissando* (*mīdā*, *the ancient vali*). A glide touching all the intermediary sounds between two notes will be written:



(b) *Portamento* (*ghasītā*, *the ancient kurulā*). Beginning the note from a grace note at the pitch of the preceding one, or even from a lower note, and then gliding rapidly to its own pitch, will be written:



sung la do-o

(or, as in Rameau)



la do-o

(c) *A grace note* (*khaṭkā*, *the ancient kampitā*) is noted, as usual, before the beat and starting from the beat, but always rapid.



sung si si-do

(d) *Slow grace notes* (*līnā*) are written as sung:



(e) *Mordents* (*tiripā* and *sphuritā*, *modern hillolā* and *gitkiri*), if of normal amplitude, will be written as usual and ; but if the mordent is only a small vibration, less than half a tone in amplitude, it will be written between brackets: ().

GENERAL NOTATION II

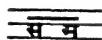
Indian syllabic—Sol-fa—notation

We shall follow the classical system used by Bhāṭkhaṇḍe, marking each note by its first letter and using the sign udāttā (raised) (म) above the letter for tīvrā, and anudāttā (lowered) (तु) below the letter for komalā. We shall however drop all the vowel-signs to leave as much room as possible for additional signs. The śhuddhā svarās will thus be written:

स र ग म प ध न

Komalā (flat) svarās will be written: र ग ध तु, and *tīvrā (sharp)* Ma as म

Mīḍā (*gliding, the ancient vali.*) A continuous line above the svarās means “portamento” (mīḍā):



If a note begins with a rapid portamento (ghasīṭā) from a grace note at the pitch of the preceding note, this is indicated by an open bracket. For example: स(ग means स चग

Ornaments (*gamakās or alamkārās*) are written in small letters: गमर लम्स They must be sung very quickly without interfering with the mātrā. Melody should be first practised without them.

गमरस is written ग

The slow trill (*gadgaditā, sobbing*) स रस चस चस etc., is written as sung. The quick trill, like a tremolo (corresponding, for example, with गगगगगगगग, etc.) is written ग~~~~~

Grace notes (*khaṭkā, ancient kampitā*) can begin with the beat of the mātrā or before. The mātrā-sign will, therefore,

NOTATION

be written in its proper place either at the beginning of the grace or after it—either  S or  S

 is the *mordent* (*gamakā*—*tiripā* or *hillolā*) using the note above, e.g.:  means 

 is the mordent (*gamakā*—*sphuritā* or *gitkiri*) using the note below. E.g.:  means 

 means increasing the volume of the voice.

 means decreasing the volume of the voice.

> (above the svarā) means accentuated ().

S means: hold the same sound for another mātrā.

— no sound.

▼ (above the notes) means “staccato”, i.e. stop the sound as soon as the note has been uttered, like the snapping of a string.

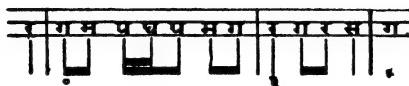
— A dot above means higher octave (tārā). E.g.
 etc.

— A dot below means lower octave (mandrā). E.g.
 etc.

— and — A double dot above means the second higher octave; a double dot below, the second lower octave.

 Groups of notes sung as one word or sentence without taking breath are indicated by a slur . In this case the first note is always slightly accentuated and the last one always softer.

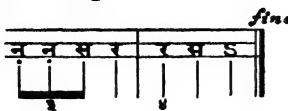
and | The end of each time-beat is shown by a thin vertical line. The end of each rhythm-unit (*tālā*) is indicated by a thick vertical line. The samā is marked x, tāli 2, 3, etc., khāli o.



|| The end of a piece, or of a part, is indicated by a double

NORTHERN INDIAN MUSIC

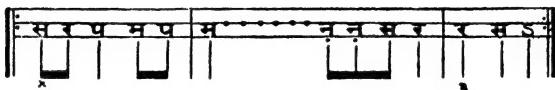
line. If it is the general end after repetitions, the word "fine"** (end) is added. E.g.:



|| : || Repeat.

|| Any part which is to be repeated is enclosed within double vertical lines; those at the beginning have two dots after them **|| :**, those at the end two dots before them **:||**.

E.g.:



D.C. The letters D.C. (Da capo = from the beginning) placed after a double bar at the end of a passage mean that one should start again from the very beginning.

p means "piano" (पियानो, soft, sūkṣhmā).

pp .. "pianissimo" (पियानिस्सिमो, very soft, ati-sūkṣhmā).

f .. "forte" (फोर्टे, loud, puṣṭah).

ff .. "fortissimo" (फोर्टास्सिमो, very loud, atipuṣṭah).

mf .. "mezzo forte" (मेझ़फ़ो फोर्टे, moderately loud, madhyā).

"a tempo" means "return to the original movement or speed."

Division of Mātrās

One time-unit or mātrā is represented by a vertical line below the note.

* Pronounce: फिले.

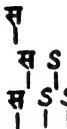
According to an international convention, all musical terms and abbreviations used in Western music are in the Italian language. We hope our Indian readers will not object to this introduction of foreign terms into the Indian notation: the use of such an international convention has the great advantage of making both Indian and staff notation easily understandable in every country.

NOTATION

A note lasting one mātrā is thus written: स

A note lasting two mātrās:

A note lasting three mātrās:



etc.

One mātrā can be divided into:

One mātrā is ए
|

(a) two equal parts, written स र

1/2 mātrā is स
|

(b) three equal parts written स र ग

(c) four equal parts written स र ग म or स र ग म

1/4 mātrā is स
|

(d) five equal parts written स र ग र स

(e) six equal parts written स र ग म प ध

(f) eight equal parts written स र स र ग म ग म

1/8 mātrā is स
|

In this way all the possible time divisions can be written.
For example:

One quarter mātrā and 3/4: स र स ; 3/4 and 1/4: स स र

Two quarter mātrās and one half: स र स ; one half and two
quarters: स स र ; one quarter, one half, one quarter: स र स स

quarters: स स र ; one quarter, one half, one quarter: स र स स ;

NORTHERN INDIAN MUSIC

three $\frac{1}{6}$ mātrās and one half:  ; one eighth of a mātrā

and $\frac{7}{8}$:  ; two $\frac{1}{8}$ mātrās and $\frac{3}{4}$:  ; four $\frac{1}{8}$

mātrās and $\frac{1}{2}$:  ; etc.

Tempos (Layā)

अथ त्रयो लापाः सिद्धा द्रुतमध्यविविक्षिताः ।

"There are three tempos—fast, medium and slow." (*Dattilā*, 151.)

Indian music, theoretically, knows three main tempos (*layā*), each being the double of the last. These are:

Vilambitā (slow), in which each beat (*tāli*) is said to last about one second (a crotchet = 60).

Madhyā (medium), in which each beat is said to last about $\frac{1}{2}$ second (a crotchet = 120).

Drutā (fast), in which each beat is said to last about $\frac{1}{4}$ second (a crotchet = 240).

In each case the exact tempo will be expressed, as is customary in Western music, by the number of "time units (mātrās) per minute" as they are given by an ordinary *metronome*. For example, a crotchet = 54, a crotchet = 40 (mātrā = 54, mātrā = 40) mean that there are respectively 54 mātrās and 40 mātrās per minute.

The notes, according to their length, usually bear the following names:

Chatasrā. semibreve, lasts 4 mātrās (units)

°



Guru (long), minim, „ 2 „

♩



Laghu (short), crotchet „ 1 „

♩



NOTATION

Drutā (fast), quaver lasts $\frac{1}{2}$ mātrās (units)		
Añu-drutā (atom-fast), , , $\frac{1}{4}$, , semitrill		
Añu-añu-drutā (demi- , , $\frac{1}{8}$, , semitrill)		

etc.

In a more ancient system (see Svarup: *Theory of Indian Music*, p. 106) the mātrā or time-unit is said to be the shortest time in which a syllable can be pronounced. The normal human pulse-beat lasts three mātrās. The usual musical beat, or clap of the hand, is then called laghu (short) and is said to last from 3 to 9 mātrās (usually 4).

According to this system the time-divisions are as follows:

- (J) (|) Laghu (short) lasts 4 mātrās.
- (J) (L) Drutā (fast) lasts 2 mātrās.
- (J) (L) Kalā (portion) (or Añudrutā, or Añu, or Virāmā)
lasts 1 mātrā.
- Nimiśhā (wink) is $\frac{1}{8}$ of a mātrā.
- Kāshṭhā (limit) $\frac{1}{8}$ of a Nimiśhā.
- Lavā (fragment) $\frac{1}{8}$ of a Kāshṭhā.
- Kṣhaṇā (instant) $\frac{1}{8}$ of a Lavā.
- (J) (ss) Guru (long) = 8 mātrās.
- (J) (sss) Plutā (extended) = 12 mātrās.
- (o) (ssss) Kākāpadā (crow-foot) = 16 mātrās.

The tempos, like the scales, are connected with moods:

"In a laughing or a loving mood use a moderate tempo; in disgust and fear, a slow one; in the heroic mood, in wrath and in wonder, a fast tempo." (*Viś. Dharm.* III, 18.)⁵⁴

CHAPTER V

RHYTHM (TĀLĀ)

उन्नयादित्रयं लोकं यतस्तावेन जायते ।
 कीटकादिपृथग्नां तालेनैव गतिर्भवेत् ॥
 पा (या ?) नि कानि च कर्मणि लोकं तालाश्रितानि च ।
 आदित्यादिग्रहाणाऽच तालेनैव गतिर्भवेत् ॥

“The arising, enduring and disappearance of the three worlds come from rhythm (tālā). From the smallest worm onward, all animals move by rhythm. All work in the world depends on rhythm. It is by rhythm that the sun and the planets move.”
 (Quoted in *Rāgā Kalpadrumam*.)

गीतं शार्यं तथा दृश्यं यतस्तासे गतिर्भित्तम् ।

“Song, dance and the playing of instruments depend upon rhythm.” (*Saṅg. Ratn.* 5, 2; *Śh. tat. Ratn.* 6, 9, 1.)

Indian music uses a great number of rhythms or “tālās”* and they are often of great subtlety and complexity.

In the Ālāpā, the first exposition of the theme of a rāgā, though there are rhythmic-units (mātrās), there is no complex rhythm. This will be introduced only when, after the Ālāpā, the “full exposition of the theme in slow tempo”, the development of variations requires all kinds of rhythms. The usual notation of rāgās is necessarily limited to the first exposition of the theme in the Ālāpā, and cannot therefore use any definite tālā.

The syllables (bols) given are the mnemonic names of the different strokes on the drums (tablā or pakhāvajā) used in stating the base rhythm without ornamentation. For the tablā, this basic rhythm is called “thekā”. The syllables used to represent the strokes on the large drum (pakhāvajā) differ from those for the tablā: they are called “thapiyā”.

* “The syllable ‘ta’ represents Śhaṅkarā (Śivā) the ‘Giver of Happiness’, the syllable ‘la’ the ‘Lady of the Mountain’ (Pārvati). Rhythm is called ‘tālā’, because it is the union of the First Principle (Śivā) and his Energy (Śakti=Pārvati). Śivā and Śakti being its very nature, Rhythm (tālā), one with the life-breath, is meritorious, leads to fame, gives enjoyment and Liberation and so is cherished by Yogis.” (Quoted in *Rāgā Kalpadrumam* and *Śh. tat. Ratn.* 6, 9, 3, in the latter the first two lines only.)⁶⁵

RHYTHM

A rhythm, or tālā, consists of three elements—an initial beat called "samā", other beats called "tāli", and empty beats or rests called "khāli". The middle point of a tālā is called "visamā".

The first beat of each tālā (the "samā") is marked x or 1, the subsequent beats ("tālis") are marked 2, 3, 4, etc. the empty beats or rests ("khālis") are marked o (or $\frac{1}{2}$).

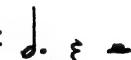
Each of the equal time-units (represented here by distinct syllables) is called a mātrā.

The Main Rhythms (Tālās)

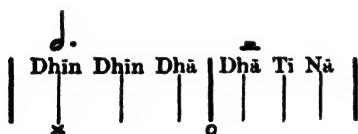
दृश्यमान देहस्व नासिका हृत्तव्यके ।
तालहीनं तथा गीतं मासाहीनं हृत्तव्यवा ॥

"The face predominates in the body and the nose is in the middle of the face. A song without rhythm is like a face without a nose."
(*Saṅg. Ratn., Nādārthā Rāgā mālā.*)

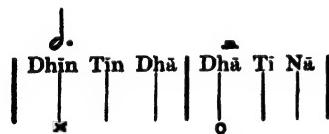
Tālā Dādārā 6/4

6 mātrās (time-units), one main beat, two divisions: 

(Tablā bols).

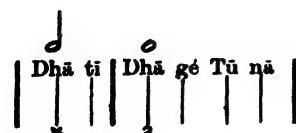


The alternate measure-bar can have the variation:



Pāttī Tālā 6/4

6 mātrās, 2 main beats, 2 divisions: 



NORTHERN INDIAN MUSIC

Tālā Tīvrā 7/4

7 mātrās, 3 main beats, 3 divisions:
(Pakhāvajā bols)



Teorā 7/4

7 mātrās, 3 main beats, 3 divisions:



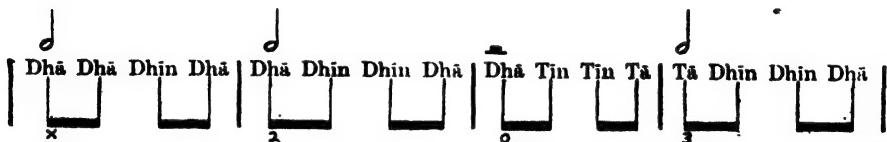
Rūpākā 7/4

7 mātrās, 3 main beats, 3 divisions:
(Tablā bols)



Tritālā 8/4

8 mātrās, 3 main beats, 4 divisions:
(Tablā bols)



Or:



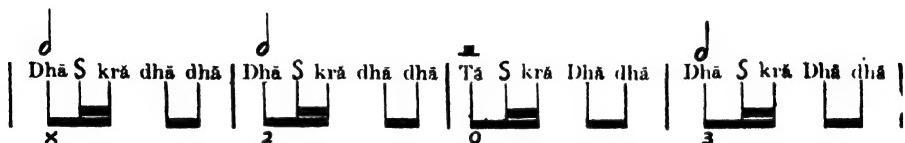
RHYTHM

Tilavādā 8/4

8 mātrās, 3 main beats, 4 divisions:
(Tablā bols)

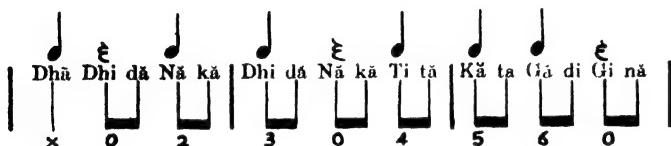


Or:



Mattā Tālā 9/4

9 mātrās, 6 main beats, 9 divisions:
(Tablā bols)



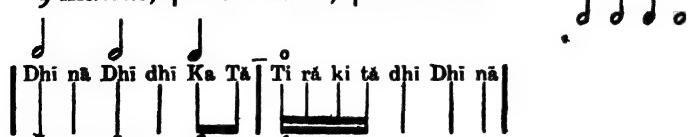
Kulā Tālā 9/4

9 mātrās, 2 main beats, 3 divisions:



Chandrākrīdā Tālā 9/4

9 mātrās, 4 main beats, 4 divisions:



NORTHERN INDIAN MUSIC

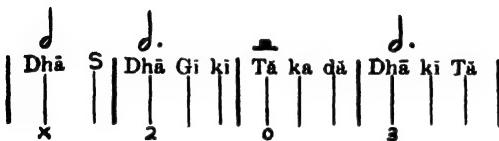
Jhapātālā 10/4
10 mātrās, 3 main beats, 4 divisions: 



also given (tablā bols) as:



Or (pakhāvajā bols):



Sūlā Tālā 10/4
10 mātrās, 3 main beats, 5 divisions:
(Pakhāvajā bols) 

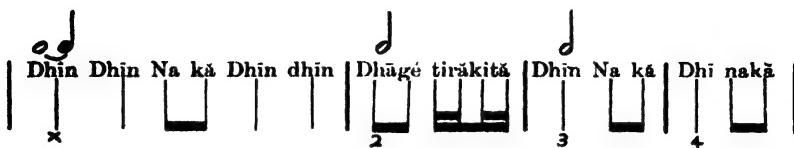


Surāphāktā 10/4
10 mātrās, 3 main beats, 5 divisions: 

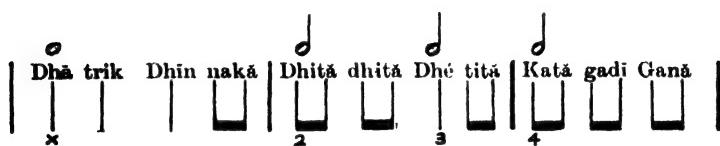


RHYTHM

Jagāpālā Tālā 11/4
11 mātrās, 4 main beats, 4 divisions:



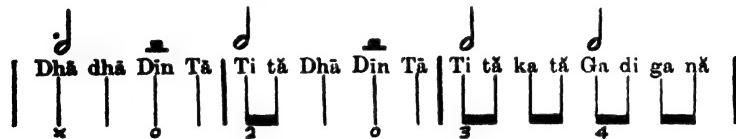
Bhānumati Tālā 11/4
11 mātrās, 4 main beats, 4 divisions:



Mandari Tālā 11/4
11 mātrās, 4 main beats, 4 divisions:



Chautālā 12/4
12 mātrās, 4 main beats, 6 divisions:
(Pakhāvajā bols)

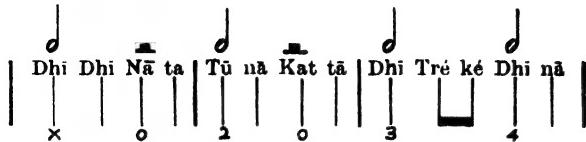


Ekā Tālā 12/4
12 mātrās, 4 main beats, 6 divisions:
(Tablā bols)



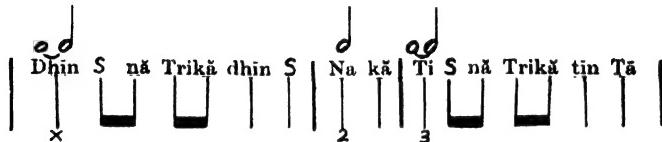
NORTHERN INDIAN MUSIC

Or:



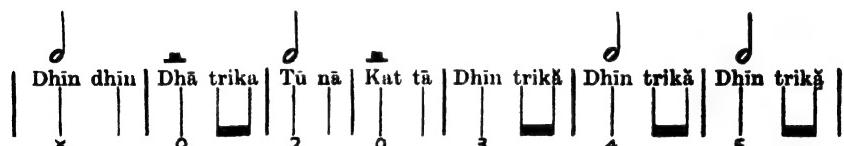
Udayā Tālā 12/4

12 mātrās, 3 main beats, 3 divisions:



Pharodastā Pañjā Tālā 14/4

14 mātrās, 5 main beats, 7 divisions:

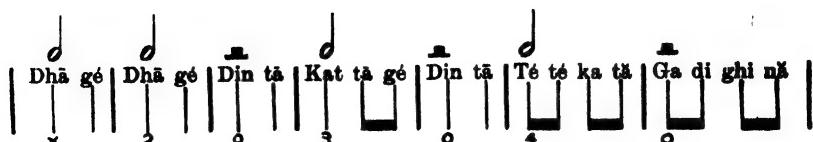


Ādā Chautālā 14/4

14 mātrās, 4 main beats, 7 divisions:
(Tablā bols)



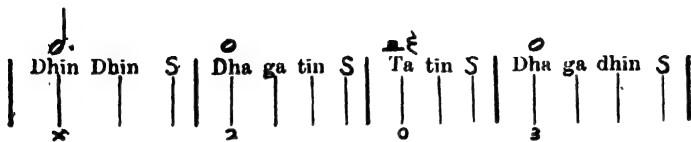
Or:



RHYTHM

Dīpāchandī 14/4

14 mātrās, 3 main beats, 4 divisions:
(Tablā bols)



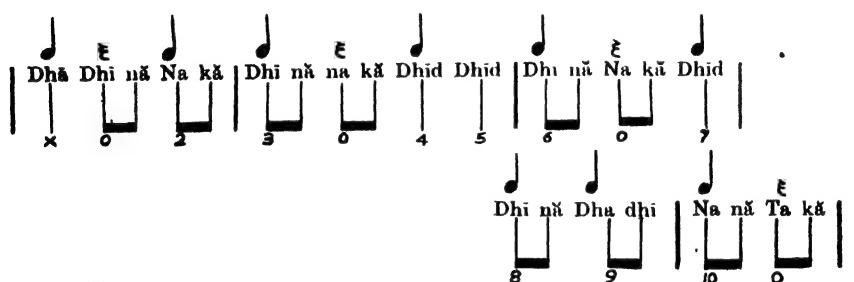
Yatā 14/4

14 mātrās, 3 main beats, 4 divisions:



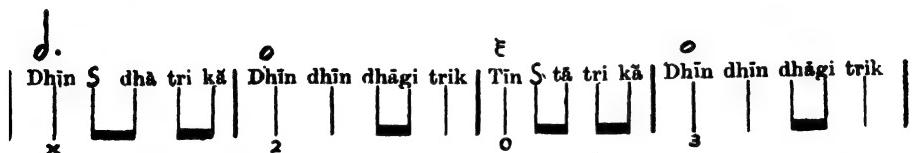
Brahmā Tālā 14/4

14 matras, 10 main beats, 14 divisions:



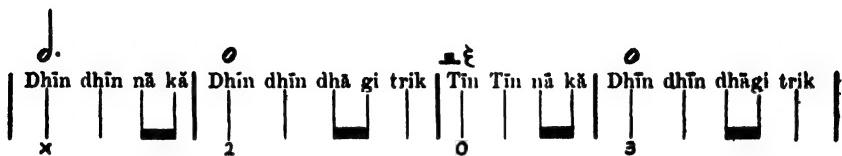
Jhūmārā Tālā 14/4

14 mātrās, 3 main beats, 4 divisions:
(Tablā bols)



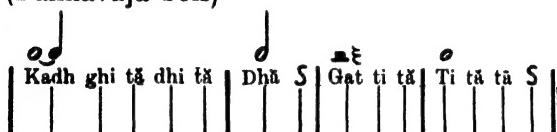
NORTHERN INDIAN MUSIC

The alternate measure-bar can have the variation:

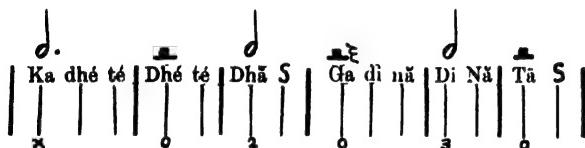


Dhamār Tālā 14/4

14 mātrās, 3 main beats, 4 divisions:
(Pakhāvajā bols)



Or: 14 mātrās, 3 main beats, 6 divisions:



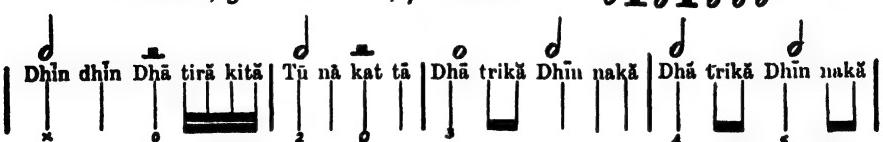
Gajā Jhampā Tālā 15/4

15 mātrās, 3 main beats, 4 divisions:
(Tablā bols)



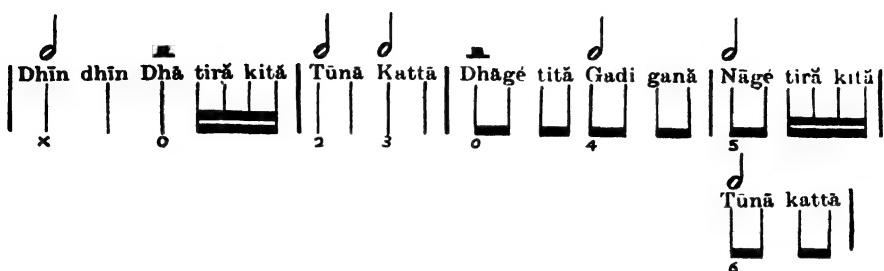
Pañjā Sādhā Tālā 16/4

16 mātrās, 5 main beats, 7 divisions:

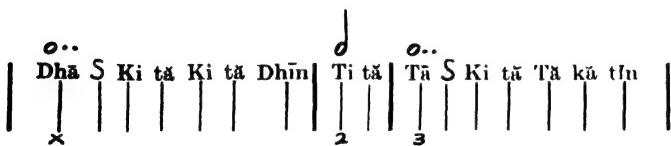


RHYTHM

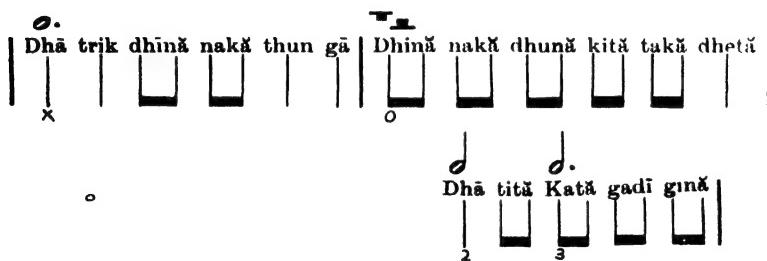
Chhakkā Tālā 16/4
16 mātrās, 6 main beats, 8 divisions:



Udīraṇā Tālā 16/4
16 mātrās, 3 main beats, 3 divisions:



Śhikharā Tālā 17/4
17 mātrās, 3 main beats, 4 divisions:



Syncopation

"From the point of view of rhythm, the attack of the sound can be of three kinds: 'on the beat' (samā), 'after the beat' (atitā) and 'before the beat' (anāgatā).

"When the rhythm follows exactly the same timing as the song [dance, instruments], etc., and the stroke [of the drum] comes together with the rhythmic clap of the hands, this is known as the attack 'on the beat' (samā).

NORTHERN INDIAN MUSIC

“When the attack [of the note] in the song comes after the clap of the hand, this is known as ‘after the beat’ (*atītā*).

“And when the note has a slight tendency to be attacked early, when the hand is just lifted to clap, this is known as the attack ‘before the beat’ (*anāgatā*).” (*Saṅgītā Sārāmṛitā*, *Tālā* (13th) Chapter, p. 166, Madras ed.)⁵⁵

Played “after the beat”, the note is said to express reluctance, doubt.

Played “on the beat”, the note expresses precision, soberness.

Played “before the beat”, the note is said to express joy, liveliness, vitality.

CHAPTER VI

MELODIC DEVELOPMENT

Varnā (Melodic Movement)

ALL the kinds of variations or melodic forms through which a scale can be developed into a melody are called "melodic movement" (*varṇā*). There are three possible elements of melodic movement—ascending, descending, keeping to the same note. A mixture of these three is said to form a fourth kind of melodic movement, called "wandering" (*sañchārī*).

"The action of singing is called 'melodic movement' (*varṇā*). It is of four kinds, defined as: level, ascending, descending and wandering." (*Saṅg. Ratn.* 1, 6, 1; *Saṅg. Darp.* 1-160.)⁵⁶

"Holding the same note continuously is called *sthāyī* (level)* the two others are as their names indicate: ascending is called *ārohā*, descending is called *avarohā*; a melodic movement combining all these features is called *sañchārī* (wandering)." (*Saṅg. Ratn.* 1, 6, 2-3; *Saṅg. Darp.* 1, 160-161; *Śh. tat. Ratn.* 6, 7, 82.)⁵⁸

The "level" (*sthāyī*) melodic movement is also described as follows:

"Where differences are numerous, this is called 'level' (*sthāyī*) melodic movement. And when a motive begins and ends on the same note this is also 'level' (*sthāyī*)."
(*Śh. tat. Ratn.* VI, 7, 84-85.)⁵⁹

Tānās (Melodic Figures)

तानासवाहस्तकोटि तानश्वपेदाच्च कर्षयते ॥

"The 490,000,000 *tānās* are divided into three categories."
(*Nāy. Samh.* 2, 64.)

Tānās are the melodic figures formed by combining the notes together.

* "The singing of verses on one note only is called *sthāyī* (level) melodic movement." (*Dattilam*, 98.)⁶⁰

"The weaving together of the notes forms the tānās (melodic figures)." (*Nār. Śik.* 1, 2, 6.)⁶⁰

These melodic figures are divided into two chief categories, those that belong to one mode only and those belonging to several modes, the first being known as pure (śuddhā tānās), the second as deceitful (kūṭā tānās). Since a difference in any of the notes brings a change of mode, only figures that make use of all the notes of a mode can be said without doubt to belong to it alone. So the śuddhā tānās are usually said to be identical with the plagal forms of the scales (the mūrch'hanās).

"The tānās (melodic figures) are of two kinds—pure (śuddhā) or deceitful (kūṭā). A pure tānā is that through which the form of one rāgā only can appear, while a deceitful tānā is one through which the form of two or more different rāgās may appear because it is common to several. For some unknown reason the ancient writers have not explained the use [of the pure tānās] in practical detail. But all agree that their number is eighty-four. In the opinion of some, they are developed from the mūrch'hanās (plagal scales)." (*Chaturdaṇḍi Prakāśikā*).⁶¹

The number of possible combinations of the notes to form melodic figures or tānās is theoretically very large.

"In each of the plagal scales (mūrch'hanā) there are five thousand and forty [possible] kūṭā tānās." (*Saṅg. Ratn.* 1, 4; 33.).⁶²

"In these fifty-six mūrch'hanās are counted 282,240 complete (pure) and deceitful (kūṭā) tānās." (*Saṅg. Ratn.* 1, 4, 34–35.).⁶³

In present-day music the word "tānā" is often used for the ancient alamkārās. These form groups of notes or small melodic figures that repeatedly recur. When similar tānās follow one another in ascending order this is called āhāti (rolling).

E.g.



The same descending is called pratyāhāti (rolling down).

* "The melodic figures by which a mode, a rāgā, can be developed the wise call tānās (extensions). They are defined as of two kinds—pure (śuddhā) or deceitful (kūṭā). The secret of the definition of the śuddhā tānās is not to be developed here, so I need not speak of them." (Quoted in *Śrīmallakṣhyā Saṅgitam*).⁶⁴

Mūr̄ch'hanās (Modal Scales)

मूर्च्छने येन रागो हि मूर्च्छनेत्यभिसंक्षिप्ता ।

"That which spans (mūr̄chhā) the scale of a mode is called mūr̄ch'hanā." (*Brihaddeśī* 94.)

The term mūr̄ch'hanā (modal scale) was used in medieval music for the different types of scales from which the modes are derived. There are three main types of such scales, and so three kinds of mūr̄ch'hanās.

(1) The first use of the word mūr̄ch'hanā refers to the classification of modes as plagal forms of the basic scale. This way of classification has however been replaced by the "scale-types" or ṭhāṭs.

"The sequence of the seven notes in ascent or descent is called mūr̄ch'hanā. There are seven in each of the two basic scales." (*Saṅg. Mak.* I-66, reproduced in *Chat. Rāgā*, I, 22. *Saṅg. Ratn.* I, 4, 9 and *Śh. tat. Ratn.* 6, 7, 32-44.)⁶⁵

(2) The name mūr̄ch'hanā was also given to the chromatic scale of twelve notes (see above, p. 92).

"The modal scale (mūr̄ch'hanā) should be known to the wise as having twelve notes from which can be built mode-types and melodies in the high as well as the low octave." (Nandikeśvara quoted in *Brihaddeśī*, comm. on 118 and in Simh. comm. *Saṅg. Ratn.* I, 4, 15-16.)⁶⁶

(3) Mūr̄ch'hanā was further used for pentatonic, hexatonic, heptatonic and eight- or nine-note scales. This division is now usually known as jāti (see below, section on Jāti).

"The modal scales of seven notes are of four kinds: complete (heptatonic, pūrnā), hexatonic (śhāḍavā), pentatonic (auḍavā) and intercalary (sādhāraṇā). In singing, a scale of seven notes is considered the complete scale, a scale of six notes is called hexatonic, a scale of five notes pentatonic, a scale [of eight or nine notes], making use of the intercalary notes Kākali Ni (B, Ni śhuddhā) and Antarā Ga (E, Ga śhuddhā), is called "intercalary" (sādhāraṇā)." (*Brihaddeśī*, comm. on I, 95.)⁶⁷

The word mūr̄ch'hanā is sometimes used in modern music, mostly by professional Muhammadan musicians, to represent melodic ornaments in the form of the mordents tiripā and sphuritā (w or ψ); these are, however, [more usually called hillolă, or giṭkiri.

Alamkārā (Ornamental Vocalization)

शशिना रत्नेव निशा विश्वलेव नदी लता विषुषेव ।
अविभूषितेव च स्त्री गीत्यत्काररीना स्पात् ॥

"A melody without ornament is like a night without moon, a river without water, a vine without flowers, or a woman without jewels." (*Nāt. Sh.* 29, 75.)

"An ornamental vocalization (*alamkārā*) is a combination of several 'melodic movements' (*varṇās*)."
(*Saṅg. Ratn.* I, 6, 3; *Śh. tat. Ratn.* VI, 7, 44.)⁶⁸

Ornaments, now often confused with *tānās* (melodic figures), are vocalizations, or groups of notes used to adorn the melody, such as are used in the *Khyāl* style of singing.

Like the *varṇās* from which they are derived, *alamkārās* are divided into four kinds. The *sthāyī alamkārās* (or level ornaments) are simple vocalizings which come back to the note from which they start or to its octave; the *ārohi* (ascending) ornaments lead from one note to a different higher note; the *avarohi* (descending) ornaments lead from one note to a lower one; and the *sañchārī* (wandering) ornaments are elaborate vocalizations combining the previous ones.

The *sthāyī* (level) *alamkārās* number seven:

"The seven *sthāyī alamkārās* are *prasannā-ādi** (beginning low), *prasannā-antā* (ending low), *prasannā-ādi-antā* (beginning and ending low), *prasannā-madhyā* (low in the middle); then, *kramā-rechitā* (orderly gallop), *prastārā* (the expanded) and *prasādā* (the serene)."
(*Śh. tat. Ratn.* 6, 7, 85–86.)⁷⁰

In the *Brihaddeśī* (comm. on I, 120) these are defined as follows:

"*Prasannā-ādi* (beginning low) starts from below and ascends to the upper octave, thus: Sa Ri Ga Ma Pa Dha Ni Sa."⁷¹

Do Re Mi Fa Sol La Si Do

"*Prasannā-antā* (ending low) descends from above, thus:

Sa Ni Dha Pa Ma Ga Ri Sa."⁷²

Do Si La Sol Fa Mi Re Do

"*Prasannā-ādi-antā* (beginning and ending low) is low in the beginning and the end and high in the middle, thus:

Sa Ri Ga Ma Pa Dha Ni Sa Ni Dha Pa Ma Ga Ri Sa."⁷³

Do Re Mi Fa Sol La Si Do Si La Sol Fa Mi Re Do

* The word *prasannā* ("pleasing") is used in music as a technical term synonymous with *mandrā* ("low"). (*Brihaddeśī*, comm. I, 120): "The word 'mandrā' (low) is used for a pleasing (*prasannā*) sound."⁶⁹

MELODIC DEVELOPMENT

“*Prasannā-madhyā* (*low middle*) is low in the middle or high at the beginning and the end, thus:

Sa Ni Dha Pa Ma Ga Ri Sa Ri Ga Ma Pa Dha Ni Sa.”⁷⁴

Do Si La Sol Fa Mi Re Do Re Mi Fa Sol La Si Do

The span of the three other alamkārās is either less or more than an octave, but definitions of them (in the *Śivā tattvā Ratnākarā*) do not seem very clear.

Besides those we have named “there are twelve ascending and twelve descending melodic figures used as vocalizations (alamkārās).” (*Śh. tat. Ratn.* 6, 7, 94.)⁷⁵

Vocalizations of this last type, the wandering (sañchārī) alamkārās, are very numerous. “Among them seven are chiefly used by musicians. They are: tārā-mandrā-prasannā (high-low-low), mandrā-tārā-prasannā (low-high-low), āvartakā (whirlpool), sampradānā (gift), vidhutā (waved), upalolakā (rolling), ullāsitā (laughing).” (*Śh. tat. Ratn.* 6, 7, 96–98.)⁷⁶

In the *Śivā tattvā Ratnākarā* (6, 7, 101) these are defined:

(1) *Tārā-mandrā-prasannā* (high-low-low): Like prasannā-ādi.

(2) *Mandrā-tārā-prasannā* (low-high-low): Like prasannā-antā.

(3) *Āvartakā* (whirlpool):

Sa Sa Ri Ri Sa Sa Ri Sa; Ri Ri Ga Ga Ra Ri Ri Ga Ri; Ga Ga Ma Ma Ga Ga Ma Ga; etc.

Do Do Re Re Do Do Re Do; Re Re Mi Mi Re Re Mi Re; Mi Mi Fa Fa Mi Mi Fa Mi; etc.

(4) *Sampradānā* (gift):

Sa Sa Ri Ri Sa Sa; Ri Ri Ga Ga Ra Ri Ri; Ga Ga Ma Ma Ga Ga; etc.

Do Do Re Re Do Do; Re Re Mi Mi Re Re; Mi Mi Fa Fa Mi Mi; etc.

(5) *Vidhutā* (waved):

Sa Ga Sa Ga; Ri Ma Ri Ma; Ga Pa Ga Pa; Ma Dha Ma Dha; etc.

Do Mi Do Mi; Re Fa Re Fa; Mi Sol Mi Sol; Fa La Fa La; etc.

(6) *Upalolakā* (rolling):

Sa Ri Sa Ri Ga Ri Ga Ri; Ri Ga Ri' Ga Ma Ga Ma Ga; Ga Ma Ga Ma Pa Ma Pa Ma; etc.

Do Re Do Re Mi Re Mi Re; Re Mi Re Mi Fa Mi Fa Mi; Mi Fa Mi Fa Sol Fa Sol Fa; etc.

(7) *Ullāsitā* (laughing):

Sa Sa Ga Sa Ga; Ri Ri Ma Ri Ma; Ga Ga Pa Ga Pa; Ma Ma Dha Ma Dha; etc.

Do Do Mi Do Mi; Re Re Fa Re Fa; Mi Mi Sol Mi Sol; Fa Fa La Fa La; etc.

Grace (Gamakā)

गमकः स्वरस्य कल्पयेद् ।

"Graces (gamakās) are the ornaments of notes." (*Saṅg. Darś. comm. 2-4.*)

"When, in singing, a note rises from its own pitch and moves toward another so that [something of the expression of] the second sound passes like a shadow over it, this is called a grace (gamakā)." (*Saṅg. Sam. I, 47.*)⁷⁹

All the ways in which notes can be attacked, ornamented or resolved, are known under the general name of gamakā.

In Indian music these graces are very elaborate and of endless variety. Still they can be analysed: Śāringadevā and Nāradā III consider that their constituent elements number fifteen. Pārvitadevā reduced this to seven, Nāradā II extended it to twenty-one.

"Gamakās, also called 'roaming about' (charanā), are said to be of twenty-one kinds." (*Saṅg. Mak. 2, 17.*)⁸⁰

"The grace that pleases the mind of the hearer is a gamakā. These are of fifteen different kinds, called Tiripā (flurry), sphuritā (throb), kampitā (shake), līnā (melting away), āndolitā (swing), vali (ripple), tribhinnā (threefold), kurulā (curl), āhatā (struck), ullāsitā (laughing), plāvitā (overflow), gumphitā (tied), mudritā (sealed), nāmitā (obeisance), miśritā (mixed)." (*Saṅg. Ratn. II, 3, 87-89.*)⁷⁹

"Seven of the gamakās are more particularly known. They are sphuritā, kampitā, līnā, tiripā, āhatā, āndolitā and tribhinnā." (*Saṅg. Sam. I, 48.*)⁸⁰

(1) *The Flurry (Tiripā) (or Tiripu)*
now called Hillolā



MELODIC DEVELOPMENT

“A lovely quivering like a very slight stroke on the drum, lasting only a quarter of a quaver (*drută*—i.e. 1/8th of a *mātrā*) is known as *Tiripă*.” (*Saṅg. Ratn.* II, 3, 89–90.)⁸¹

“When the intervals quickly move round like a whirl, this the connoisseurs of music know as *Tiripu*.” (*Saṅg. Sam.* I, 52.)⁸²

- (2) *Throb (Sphurită)*
now called *Giṭkiri*



“The speed of *sphurită* is exactly one-third of a quaver (i.e. 1/6th of a *mātrā*).” (*Saṅg. Ratn.* I, 3, 90.)⁸³

“When intervals throb upwards at the speed of a semi-quaver (*aṇu-drută*—i.e. 1/4th of a *mātrā*), the wise call this *Sphurită*.” (*Saṅg. Sam.* I, 49.)⁸⁴

- (3) *The Shake (Kampită)*
now called “*Khaṭkā*”



“The *Kampită* gamakă lasts a semi-quaver (i.e. 1/4 *mātrā*).” (*Saṅg. Ratn.* II, 3, 91.)⁸⁵

“A shake of the note at twice the speed of a quaver (i.e. 1/4 *mātrā*) is known as *Kampită*.” (*Saṅg. Sam.* I, 50.)⁸⁶

- (4) *Melting away (Līnă)*



“The speed of *Līnă* is that of a quaver (*drută* = $\frac{1}{2}$ *mātrā*).” (*Saṅg. Ratn.* II, 3, 91.)⁸⁷

“When a note at the speed of a quaver softly melts into another neighbouring note this is called Melting away (*Līnă*).” (*Saṅg. Sam.* I, 51.)⁸⁸

* The Sanskrit definitions of the gamakas are not always very clear. They are interpreted here in the way that gives the most likely results for the formation of the combined graces. Some of them may however have been misunderstood.

All the definition of gamakas in the *Saṅgitā Ratnākara* are reproduced with a few minor variations in the *Śivātattvā Ratnākara* VI, 7, 100–116.

NORTHERN INDIAN MUSIC

(5) *Swing (Āndolitā)*



“Āndolitā lasts one crotchet (one mātrā).” (*Saṅg. Ratn.* II, 3, 91.)⁸⁹

“Whatever the speed of singing—fast, medium or slow—a swing lasting one crotchet (mātrā) constitutes the grace called Āndolitā.” (*Simh. comm. on Saṅg. Ratn.* II, 3, 90.)⁹⁰

“When there is a rocking of the notes lasting one crotchet or mātrā, this grace is spoken of as a ‘swing’ by connoisseurs of music.” (*Saṅg. Sam.* I, 54.)⁹¹

(6) *The Overflow (Plāvitā)*



“When the shake of the note lasts three crotchets (1 plută = 3 mātrās) this is called an Overflow.” (*Saṅg. Ratn.* II, 3, 94.)⁹²

(7) *The Ripple (Vali)*
now called Mīḍā



“Any kind of fast sliding is called a Ripple (Vali).” (*Saṅg. Ratn.* II, 3, 92.)⁹³

(8) *The Curl (Kurulā)*
now called Ghasīṭā



“Kurulā is like Vali but performed softly with a contracted throat.” (*Saṅg. Ratn.* II, 3, 93.)⁹⁴

(9) *The Sealed (Mudritā)*

“The gamakā called Sealed is produced by closing the mouth.” (*Saṅg. Ratn.* II, 3, 95.)⁹⁵

(10) *The Tied (Gumphitā)*



MELODIC DEVELOPMENT

"A deep aspirate descending into the chest is called Tied (Gumphită)." (*Saṅg. Ratn.* II, 3, 95.)⁹⁶

(11) *The Threefold (Tribhinnā)*



"The Threefold is a compact ornament running at one stroke through three notes without any rest." (*Saṅg. Ratn.* II, 3, 92.)⁹⁷

"A grace that touches three distinct points and amalgamates the qualities of all the three, turning round the note in a single flow, is traditionally known as the Threefold (Tribhinnā)." (*Saṅg. Sam.* I, 55.)⁹⁸

The *Brihaddeśī* calls this ornament Kuharită (Cuckoo) in the middle of octave and Rechită (the Gallop) in the higher octave.

(12) *Struck (Āhatā)*



"Striking a neighbouring note and coming back is known as Struck (Āhatā)." (*Saṅg. Ratn.* II, 3, 93.)⁹⁹

"Striking the next highest note, touching it slightly, and quickly coming back is called "Struck" (Āhatā)." (Simh. comm. on *Saṅg. Ratn.* II, 3, 93.)¹⁰⁰

Mataṅgă calls this ornament the Point (*Bindu*):

"When, after remaining a long time on a note such as Sa (Do), one touches with the speed of fire a higher note, remains there but for a semi-quaver (Kālā = 1/4 mātrā) and again comes down to the original Sa, this is the Point (Bindu)." (*Brihaddeśī*, comm. on I, 120.)¹⁰¹

A succession of Āhatās makes a sort of sobbing trill, called *Gadgadită* (*Sobbing*), much used in Indian music.

(13) *Laughing (Ullāsită)*



NORTHERN INDIAN MUSIC

"When the notes follow one another in order this is called 'Laughing' (Ullāsitā)." (*Saṅg. Ratn.* II, 3, 94.)¹⁰²

"In Ullāsitā the notes ascend one following another." (Simh. comm. on *Saṅg. Ratn.* II, 3, 94.)¹⁰³

(14) *Obeisance (Nāmitā)*



"A bowing down of the notes the expert in music call Nāmitā." (*Saṅg. Ratn.* II, 3, 96).¹⁰⁴

"Nāmitā is an ornament in which the notes come down to a lower pitch as if bowing." (Simh. comm. on *Saṅg. Ratn.* II, 3, 95).¹⁰⁵

(14a) *Freed (Nivṛittā)*



is the opposite of Nāmitā.

"Touching another note for one semi-quaver, as in Bindu, but stopping it without any tendency to come back is called Nivṛittā (Freed)." (*Bṛihaddeśhī*, comm. on 1,120.).¹⁰⁶

* * *

Out of these elements elaborate ornaments can be built, and they are called the mixed gamakās.

(15) *Mixed (Miśhritā)*

"Mixtures of these are known as the 'Mixed' [gamakās]. They are of many kinds." (*Saṅg. Ratn.* II, 3, 96.).¹⁰⁷

Example of mixed gamakās, given in the *Śaṅgītā Ratnākara* (3, 178–182),¹⁰⁸ are as follows:

- (1) Flurry—swing
(Tiripā—āndolitā)



MELODIC DEVELOPMENT

- (2) Melting away—shake
(Lină—kampită)



- (3) Shake—struck
(Kampită—āhată)



- (4) Flurry—throb
(Tiripă—sphurită)



- (5) Melting away—throb
(Lină—sphurită)



- (6) Throb—struck
(Sphurită—āhată)



- (7) Melting away—shake—melting away
(Lină—kampită—lină)



- (8) Threefold—curl—struck
(Tribhinnă—kurulă—āhată)



- (9) Overflow—laughing—ripple
(Plăvită—ullăsită—vali)



NORTHERN INDIAN MUSIC

- (10) Ripple—tied—sealed
(Vali—humphită—mudrită)



- (11) Obeisance—swing—ripple
(Nāmită—āndolită—vali)



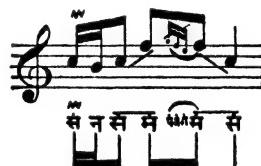
- (12) Ripple—obeisance—shake
(Vali—nāmită—kampită)



- (13) Swing—overflow—much laughing—obeisance
(Āndolită—plāvită—samullāsită—nāmită)



- (14) Flurry—swing—ripple—threefold—curl
(Tiripă—āndolită—vali—tribhinnă—kurulă)



- (15) Threefold—melting away—throb—overflow—swing
(Tribhinnă—līnă—sphurită—plāvită—āndolită)



The modern *Bhelavă*, a slow mordent at the end of a glissando, would be Vali-sphurită.

Grahă, Amshă, Nyasă

In ancient music, three notes are spoken of under the names of amshă, grahă and nyasă.

"The note with which a rāgă must begin is called Grahă. By Nyasă is understood the note that ends a song. The note most often used while playing is called 'amshă'." (*Saṅg. Darp.* 163.)¹⁰⁹

The use of the terms grahă and amshă is a little confusing, for their meaning is taken differently by authors of different periods. Some understand the "initial note" (grahă) as the first note of the mode, that is the tonic; others take it as the first note of a melody, which may well be any note. But this last interpretation seems hardly justified.

Similarly the "main note" (amshă) is taken to mean sometimes the tonic and sometimes the predominant note, the "sonant" or vādī.* The more ancient authors seem to have used the word in the first sense. Thus the *Nātyā Śhāstrā* takes the word grahă as synonymous with "amshă" and meaning the tonic:

"In all the modal scales the initial note (grahă) is equivalent to the main note (i.e. the tonic). The whole music takes its significance from this main note (amshă) which is the same as the initial note (grahă)." (*Nāt. Śh.* 28, 71, also quoted in *Brihaddeśhī*, comm. on 197.)¹¹⁰

The *Brihaddeśhī*, also uses the term "amshă" (main note) in the sense of "tonic" (basic note, Sa):

"The main note by relation with which a mode, a rāgă, is manifested is the amshă (i.e. the tonic, Sa)." (*Brihaddeśhī*, comm. on 1, 196.)¹¹¹

"This amshă-svară is the vital note (Jīvă-svară, the tonic)." (*Chaturdaṇḍī Prakāshikā*).¹¹²

In the later music "Sa (C) is the initial (grahă, i.e. the tonic) of all the rāgăs." (*Rāgā Mālā*).¹¹³

But Śhāringadevă, on the other hand, identifies the "amshă" the main note, with the "sonant", the vādī:

"Because it is most used during a performance, the vādī (sonant) is called amshă (main note)." (*Saṅg. Ratn.* I, 7, 34.).¹¹⁴

This is also the view of Abhinavă Guptă, in his commentary on the *Nātyā Śhāstrā*:

* See below: the Sonant (Vādī), p. 125.

NORTHERN INDIAN MUSIC

"The amśhā svarā is the same as the vādī." (Abhinavā Guptā, comm. on the *Nātyā Śhāstrā* 28, 23.)

"The [note] that is most used is also called amśhā." (*Brihaddeśhī*, comm. on I, 196.)¹¹⁵

"The structure of the mode entirely depends on the amśhā (tonic), from which it begins, which separates the high or low octaves, and from which its expression is derived. The amśhā is, further, the initial and final note (grahā and nyāsā), the phrase-final, part-final, and general-final note (apanyāsā, vinyāsā, sannyāsā), the centre round which the mode revolves. These are its ten characteristics." (*Nāt. Śh.*, also quoted by Kallināthā, *Saṅg. Ratn.* comm. I, 7, 29–34.)¹¹⁶

PART III

THE DEFINITION OF THE RĀGĀS

नाहं वसामि वैदुषेष्टे योगिनो हृत्ये न च ।
मद्रका यत्र गायन्ति तत्र तिष्ठामि बारद ! ॥

“I do not dwell in heaven, nor in the heart of yogis. There only I abide, O Nāradā, where my lovers sing.” (*Nāradā Samhitā* I, 7.)



CHAPTER VII

THE RĀGĀS

Rāgās or Modes

राज्यतीति रागः

"That which charms is a rāgā."*

UNLIKE Western music, which constantly changes and contrasts its moods, Indian music, like Arabic and Persian, always centres in one particular emotion which it develops, explains and cultivates, upon which it insists, and which it exalts until it creates in the hearer a suggestion almost impossible to resist. The musician can then, if his skill be sufficient, lead his audience through the magic of sound to a depth and intensity of feeling undreamt of in other musical systems.

The notes which are to convey certain definite emotions or ideas must be carefully selected from the twenty-two intervals of the śruti scale and then grouped to form a mode, a rāgā. Any artificially formed scale is not necessarily a rāgā, for its meaning may be confused and without appeal. The essential feature of a rāgā is its power of evoking an emotion that takes hold of the hearers like a spell.

The better all the notes that form a mode combine to express one definite mood, the more attractive the rāgā and the more powerful its magic. The mode must seize the mind and hold it as if enchanted. Then the mind "is charmed and becomes lost in it." (*Rāgā Vibodhā* I, 4).¹¹⁹

"A rāgā, the sages say, is a particular form of sound in which notes and melodic movements appear like ornaments and enchant the mind." (*Saṅg. Darp.* 2-I.).¹²⁰

Rāgās vary indefinitely. The number of rāgās theoretically possible is almost limitless. In practice, however, only a few

* "The word 'rāgā' is obtained by adding the suffix 'ghan' (which indicates 'doing') to the root 'rañj', 'to please'." (*Saṅg. Darp.* comm. on 2-I.).¹¹⁷

"That group of notes (svarās) which charms is a 'rāgā': so say the wise."¹¹⁸

hundred rāgās are generally used, but, as we have seen, their classification is often confused, the same rāgās having different names in different provinces, and different rāgās the same name. But, of course, this has very little importance musically.

Moods, Colours and Notes

Each of the notes of the scale has its own kind of expression and a distinct psychological or physical effect, and so it can be related with a colour, a mood, a metre, a deity or one of the subtle centres (*chakrās*) of the body. These correspondences are given an important place in all Sanskrit treatises on music. Since a complete list of them would be very lengthy, only the correspondences of notes with moods and colours will be given here as an example.

"Love (*śhrīngārā*), laughter (*hāsyā*), compassion (*karuṇā*), heroism (*vīrā*), wrath (*raudrā*), fear (*bhayānakā*), disgust (*bībhatsā*), wonder (*adbhutā*) and peace (*śhānti*) are the nine moods of dramatic art. . . .

Of these, for laughter and love, Madhyamā (fourth) and Pañchamā (fifth) are used.

In the heroic mood, in wrath and wonder, Śhadjā (tonic) and Pañchamā (fifth) (or Rishabhā, second);*

for compassion, Niṣhādā (Ni k., minor seventh) and Gāndhārā (Ga k., minor third);

in disgust and fear, Dhaivatā (sixth);

in peace, Madhyamā (fourth)." (*Viṣh. Dharm.* III, 18.)¹²²

"Śhadjā (C, the tonic) is bright like the petals of a lōtus.

Rishabhā (D) is like a parrot.†

Gāndhārā (modern Ga k., E♭) is golden.

Madhyamā (F) is like jasmin.

Pañchamā (G) is dark (or, of the colour that attracts).‡

Dhaivatā (A) is yellow.

Niṣhādā (modern Ni k., B♭) is of all colours." (*Brihaddeśī* I, 77, and *Nār. Śhik.* IV, 1–2.)¹²⁴

* The *Brihaddeśī* says:

"Śhadjā (tonic) and Rishabhā (second) in the heroic mood, in wrath and wonder." (*Brihaddeśī* I, 84.)¹²¹

† The *Saṅgītā Ratnākara* (I, 3, 54) says that Rishabhā (D) is tawny (Piñjarah).

‡ "That which attracts is called 'Kṛiṣṇā' (dark)." ¹²³

The Description of Rāgās in Verses and Pictures

The correspondence of the notes with colours, emotions, deities and so on makes possible a graphic representation of the modes. And the rāgā as a whole determines a state of feeling which can also be expressed in poems or in pictures. But it must be remembered that, since many rāgās have changed their form, these pictures and poems often no longer accurately represent the rāgā after which they are named.

All these verses are traditionally known to musicians, though they do not always know the names of the books from which they are taken. Most of the verses, later reproduced in the *Saṅgitā Darpaṇā*,* the *Chatvārimśach'hata Rāgā nirūpaṇam*, the *Śivā tattvā Ratnākara*, the *Rāgā Sāgarā* and several other works, seem originally to have come from the work of Kohalā now believed lost. Further verses are quoted, without reference, in the nineteenth-century *Rāgā Kalpa drumā*.

The Four Phases in the Development of a Rāgā .

A rāgā is generally developed through four phases, called Śthāyi, Antarā, Sañchāri and Ābhoga.

I. The *STHĀYI* (The Pallavi of South Indian music) establishes the theme, starting from the middle tonic (middle Sa). It is focused on the sonant (vādi) and though it never rises above the B (Ni) of the middle octave, it descends as deeply as possible into the lower octave.

II. *ANTARĀ* (the Anupallavi of South Indian music) starts from the middle of the middle octave and develops mainly in that and the upper octave. It is focused on the consonant (samvādi).

III. *SAÑCHĀRI* (the Charanam of South Indian music) begins from the higher C (Sa) and moves freely in all three octaves.

IV. *ĀBHOGĀ* is a concluding variation, also starting, as a

* In several of the verses describing the rāgās, we have to follow the quotations of the *Saṅgitā Darpaṇā* given in the *Śivā tattvā Ratnākara* rather than the text of the available edition of the *Saṅgitā Darpaṇā* itself, which often seems corrupt.

rule, from the higher C (Sa). In songs, it often contains the name of the composer.

In songs the *sthāyī* is sung again after each part.

In late medieval music, these four phases were rather differently divided. They were called *udgrāhā* (prelude), *sthāyī* (theme), *sañchārī* (variation) and *muktāyī* (conclusion).

Śrī Nivāsā in his *Rāgā Tattvā. Vibodhā* describes them as follows:

"The melodic figures with which one begins are called *udgrāhā* (prelude). The fixed melodic figures which do not as a rule appear at the beginning or the end are known to experts as *sthāyī* (the theme). The mixed theme, with ascending [and descending] vocalization, is called *sañchārī* (variation). Where the mode comes to a rest is called *samāpti* (conclusion)." ¹²⁵

Styles of Singing or Playing

There are many distinct styles in which the variations of a *rāgā* may be sung or played. Some of the most important are here briefly described.

A. STYLES OF SINGING.

1. ĀLĀPĀ is the sober exposition of the theme in slow time, with portamentos but no elaborate ornaments.

2. SVARĀMĀLIKĀ, OR SVARĀ-GRĀMĀ, OR SA RI GA MA is Ālāpā in which the name of each of the notes is sung, as is sometimes done in the Western sol-fa system.

3. DHRUPADĀ is Ālāpā with words. It is solemn and religious in style, usually sung in slow time and using only the more sober rhythms (*tālās*). It is the noblest and also the most difficult style of singing.

Bhāvā Bhaṭṭā in his *Anupā Sangītā Ratnākara* defines Dhrupadā as follows :

"Dhruvāpadā is traditionally known as a divine form of song that shines in the language and literature of the Middle Country. Composed of two or four sentences expressing the emotion of love, it is sung by both men and women. It consists of a poem set to the ālāpā of a *rāgā* with repetition of final syllables and of groups of syllables conveying different

THE RAGAS

meanings. It has a metrical introduction in two verses, a prelude, a chorus, and a final stanza of noble styles." (*Anupā Sangītā Ratn.* I, 65-67.)¹²⁶

4. JHORĀ is Ālāpā without portamentos. (Almost the whole of Western vocal music is in Jhorā.)

5. TANJHORĀ is Jhorā sung quickly.

6. KHĀNDĀRVĀNĪ DHRUPADA is Jhorā sung with each note repeated several times as if the voice were shaking.

7. In KHYĀL simple ornaments are used, particularly ascending and descending vocalizations, trills and grace notes (gamakās) and repeated groups of notes or melodic figures (tānās). Khyāl is charming and light, often used for love-songs. It is usually sung in madhyā tālā (moderate tempo).

8. ṬAPPĀ is a very elaborate style of singing in which each note of the Dhrupadā prototype is delicately ornamented without, however, breaking or obscuring the general melodic line. It is usually sung in madhyā tālā.

9. THUMRĪ combines Khyāl and Ṭappā, using all ornaments (gamakās), and repeating each word or line in varied styles. It is very lively and adapted to pantomime and dancing. It is usually sung in madhyā tālā. It has only one sthāyī and one antarā.

10. TELLANĀS are sung rhythmically with the syllables (bols) used to represent the strokes of the drum.

11. DĀDRĀS are folk-songs in Dādrā tālā.

12. GHAZALS (of Persian origin) are love-lyrics sung as a sort of light popular Thumrī. They consist only of an antarā, with a simple melody.

13. BHAJAN is a religious popular song with a fixed tune accompanied by rhythmic instruments, often sung in mixed rāgās.

14. KIRTAN, similar to Bhajan, is a succession of religious songs with changes of mood and rāgā, chiefly developed in Bengal.

B. STYLES OF PLAYING (ON STRINGED INSTRUMENTS).

1. VILAMPAT is the development of the theme in slow time with portamentos, etc. It corresponds with the Ālāpā in singing.

NORTHERN INDIAN MUSIC

2. JHORĀ is played, on the vīnā, with the first two fingers only. It is the bare melody, each note separate, with neither portamento nor ornament.

3. JHALĀ is a rhythmic style in which each note of the melody is followed by a fixed number of rhythmic strokes on the tonic. For example:



4. THONK resembles Jhorā, but is played loud and fast.
5. THONK-JHALĀ is a mixture of Thonk and Jhalā.
6. In TARPAN the strings are struck by rapid front and back strokes of the finger, very much as one does on the mandoline or the Russian balalaika.

CHAPTER VIII

DEFINITION OF THE RĀGĀS

The Fifteen Elements in the Definition of a Rāgā

FROM the technical point of view a rāgā is essentially a scale with a tonic and two axial notes, but it has further characteristics.

The different elements in the definition of a rāgā have been grouped here under fifteen main headings. Their application to each individual rāgā will be found in the second volume of this book.*

For the sake of clearness, these fifteen headings have not been kept in exactly the same order in the definition and in the application, but they can be traced by their numbers.

For the clear understanding of these fifteen elements we shall also have to explain a few technical points which have not so far been dealt with.

The Tuning of the Instruments (I)

The frets of the stringed instrument, or the tunable keyboard, must first be set to the proper intervals, the proper śruti-s. Both the exact śruti-s written above the notes, and their conventional notation for the Indian keyboard† are given with the notation.

The true tuning, by which the expression of the rāgā is defined, is always that of the descending scale. In rāgās where there is a difference of śruti in ascent and descent but the instrument used does not provide two different śruti-s, the scale tuned for descending can generally be used for ascending but never the tuning of the ascending scale for the descending one.

* To be published shortly (1949).

† See p. 79.

Class (Jāti) (3)

The Indian scale is divided into seven regions or sections ruled by the seven notes, or svarās, of the diatonic scale and named after them.

As we have seen already, if, in any mode, one or more notes be used from each division, the mode is called "complete" (*sampūrnā*), but if one division is not represented, whatever the number of notes in the other divisions the mode is called hexatonic (*śhāḍavā*); if two divisions are not represented the mode is pentatonic (*auḍavā*).

This is very like the Greek division. Since both the chromatic and enharmonic genera have, by definition, a third in each tetrachord, that is one diatonic note omitted, they will necessarily be *auḍavā*, whereas modes having one tetrachord chromatic and the other diatonic will be *śhāḍavā*.

The classes obtained by thus grouping modes according to the number of their notes were known in ancient music as *mürch'hanās* (see above, p. 101) but in later texts, particularly in the Eastern part of Northern India, they are called "jātis".

"Class (jāti), in rāgās, is considered to be of three kinds—*auḍavā* of five notes, *śhāḍavā* of six, *sampūrnā* (complete) of seven notes." (*Nāradā Samhitā* 2, 60; *Saṅg. Darp.* 2, 6.)¹²⁷

Melodies comprising less than five notes cannot be called rāgās (modes), but are mere "melodic figures" (*tānās*).

"Combinations of two or three or four pleasing notes form melodic figures (*tānās*): a rāgā must have five or more (notes):" (*Hṛidayā Prakāshā*).¹²⁸

Besides the three main jātis, there are modes which, in addition to the natural seven, make use of one or both of the two intercalary notes Kākali Ni and Antarā Ga. In ancient music these eight- or nine-note modes were known as the "intercalary modes" (*sādhāraṇā*).*

Though Viṣṇu Digambar in his *Saṅgitā Tattvā Darśhakā* does not use the term jāti, he reproduces the ancient classification, adding the three kinds of rāgās spoken of by Umāpati (quoted in *Rāgā Vibodhā*, comm. on 4, 3) and also by Mataṅgā (mentioned by Kallināṭhā and quoted in *Saṅgitā Darpaṇā* 2, 5). These are called: śhuddhā (pure), chhāyālagā (shadowed) and saṅkirṇā (mixed).

* See above, p. 101.

DEFINITION OF THE RAGAS

They are defined as follows:

A rāgā in which there are only unaltered notes is called "pure" (shuddhā).

A rāgā is called "shadowed" (chhāyā-lagā) when it makes use of a few notes borrowed from another rāgā, provided they do not alter the mood, but, on the contrary, enhance it.

A mixture of several rāgās is called saṅkīrṇā.

"According to Umāpati, a 'pure' rāgā charms by itself, a 'shadowed' rāgā with the help of others, a 'mixed' rāgā with the help of two." (*Rāgā Vibodhā* 4, 3.)¹²⁹

"Sampūrnā" means "complete", "śhādavā" means "of six". The word "auḍavā" has given rise to unnecessary speculation among Westerners insufficiently conversant with Hindu conceptions: Fox-Strangways, for example, in his *Music of Hindostan* (p. 122) suggests that it may have come from the name of a province where the pentatonic scale was invented. But the *Saṅgītā Darpaṇā* (comm. on 2-6), clearly explains the term:

"The derivation of the word 'Auḍavā' is as follows: Uḍavā is where the planets move, hence the 'sphere of space' (vyomā). This among the elements is the fifth (ether), thus it represents the number five. From this it is clear that the number of notes of the auḍavā (the ethereal scale) is five."¹³⁰

A similar explanation is given in the *Śhivā tattvā Ratnākara*.

There are rules for the use of the jātis, in accordance with the symbolism of numbers:

"For celebrating battle, charm and beauty, in separation, or in depicting a character, the hexatonic (śhādavā) [class of modes] is recommended.

For destroying disease or enemies, dispelling fear or sorrow, in difficulty or in suffering, in forgiveness or when planets are unfavourable, auspicious words should be sung in the pentatonic scale." (*Śh. tat. Ratn.* VI, 8, 145-147.)¹³¹

The term jāti was also used in ancient and medieval music for mode-types:

"From intervals (śhrutis), the initial (tonic, grahā) and other notes (svarās) brought together the mode-types result, therefore they are called 'jātis' (results)." (*Bṛihaddeshi*, comm. on 1, 194.)¹³²

"Jāti" in this sense has now been replaced by the term "thāṭ".

Group (2)

Some of the main rāgās have, as their satellites, secondary modes with the same general characteristics and only minor differences. These are said to belong to the group of their parent rāgās. For example, Prabhāt, Bangālā, Rāmākālī, etc., belong to the Bhairavā group.

Certain books consider the chief modes masculine in character and call them "rāgās", while the secondary modes the "rāgiṇīs", are said to be their wives, or even their "sons" (putrās).

The male rāgās, originally all pentatonic scales, are usually considered to be six in number, though some count seven, eight, or nine.*

"Bhairavā, Mālākośhā, Hindolā, Dipakā, Śrī rāgā and Meghā rāgā, these are the male rāgās." (*Saṅg. Darp.* and *Śh. tat. Ratn.* 6, 8, 44.)¹³³

Ascent and Descent (Ārohā, Avarohā) (4)

The determining element in a mode, its scale or succession of notes, often differs in ascending and descending. Many modes are, for example, pentatonic (audavā) or hexatonic (shādavā) in ascent and heptatonic (sampūrnā) descending. Some have one or two of their notes natural (śhuddhā) ascending and flattened (komalā) in descent, and so on. But the true scale of a mode, that by which its expression is defined, is always the descending scale. In all the ancient modal systems, the scale is given downwards from the higher tonic (Sa): to define a mode by giving its ascending scale first is a comparatively recent practice. Ascending scales always have an exploratory character, while descending scales, in any music, allow greater precision and clearer differentiation and should therefore always be taken as the standard.

In those parts of India where archaic forms of speech and song have been preserved (as, for example, in certain valleys of the Himalayas) songs and the playing of instruments always start from the upper tonic in a descending scale.

* The *Saṅgītā Makarandā* speaks of twenty-one male rāgās. (3-53, etc.)

DEFINITION OF THE RAGAS

The Sonant (Vādī) (5)

वादी स्वराणि राजा स्वात्

"The sonant (vādī) is the king of notes." (*Saṅg. Mak.* 2-7.)

Besides the tonic (the Sa), always fixed, each rāgā has a predominant note from which all variations begin and in which they end: it is always accentuated and bears long pauses. This main note is called vādī (that which speaks). The expression of the vādī is the predominant expression of the rāgā: its character determines the mood.

"The chief element in which the power lies of bringing out a particular mood, a rāgā, is the sonant (vādī)." (*Saṅg. Darś.* I-68.)¹³⁴

"The sonant (vādī) is the note most used while playing; it is the king (of the melody)." (*Rāgā Vibodhā* I, 37.)¹³⁵

The commentary on the *Rāgā Vibodhā* adds: "the sonant (vādī), being constantly heard, dominates the melody. Because it explains and heralds the mode, it is called vādī, (that which speaks)."

The "Consonant" (Samvādī) (6)

पन्नो संवादिक्षयते

"The consonant is like a minister." (*Saṅg. Mak.* 2, 7.)

Corresponding notes in the two tetrachords into which the octave is divided always have similar expressions. A fourth or a fifth above the vādī another note will therefore be found that responds to it, playing in the upper tetrachord a similar, though less important rôle. This note is called "samvādī" (consonant).

"The nature of the 'consonant' (samvādī) is to reinforce the 'sonant' (vādī) by which the expressiveness of the mode is engendered." (*Brihaddeśī*, comm. on I, 63.)¹³⁶

Very rare exceptions apart, the samvādī is always a fifth or a fourth above the vādī. This corresponds with an interval of twelve or eight śrutis.

"The notes that have between them an interval of twelve or

eight śrutis (perfect fifth and fourth) are called ‘consonant’ (samvādī). They are like ministers.” (*Rāgā Vibodhā* I, 37.)¹³⁷

The Commentary adds: “Samvādīs . . . sustain the . . . impression created by the vādī, just as ministers carry out the order of the king.”

“The notes between which there are eight śrutis (perfect fourth) or twelve śrutis (perfect fifth) are said, in relation with one another, to be consonant (samvādī). Such are Ni and Ga (B and E) or Ri and Dha (D and A).” (*Saṅg. Darp.* I, 69–70.)¹³⁸

Rāgās in which the samvādī is a fifth above the vādī are called “pañchamā samvādī” (having a fifth as main consonance); those in which the samvādī is a fourth above the vādī are called “madhyamā samvādī” (having a fourth as main consonance). Pañchamā samvādī rāgās have a clear, active, brilliant expression; madhyamā samvādī rāgās are passive, dormant, soft.

Assonant (Anuvādī)

अनुवादी च मृत्यवद् ।

“The ‘anuvādī’ is like a servant.” (*Saṅg. Mak.* 2–7.)

The notes of a mode that are neither “sonant”, nor “consonant” are called “assonant” (anuvādī):

“By those who see the subtle cause of things the note that is neither the sonant nor the consonant and yet is not ‘dissonant’ (vivādī) is called assonant (anuvādī).” (*Saṅgitā Pārijātā*, 81–83.)¹³⁹

Dissonant (Vivādī)

स्वरो विवादी वरी स्वात्

“Dissonant (vivādī) notes are enemies.” (*Saṅg. Mak.* 2–7.)

Notes that do not belong to a rāgā or, if they do, are used in defiance of its rules are called “dissonant” (vivādī): They destroy the expression.

“That which in a given mode breaks the charm is un-

DEFINITION OF THE RAGAS

doubtedly 'dissonant' (vivādī) from the notes of that mode. . . . This vivādī is like an enemy." (*Saṅgītā Pārijātā*, 83–84.)¹⁴⁰

"Melodic variations that would introduce a vivādī note should always be avoided."¹⁴¹

The Relation between Tuning and Scale

It should be noted that there is a strict correspondence between the tuning of the different notes, the ascending and descending scales and other peculiarities of a rāgā. Certain Śruti-s are related by such intervals that it is impossible to play them in succession. If, therefore, the expressions they represent have to be brought together to constitute the mood of a certain rāgā, their use may require melodic artifices so that they may never be in direct succession. The tuning, the ascending and descending notes, the sonant and consonant, the theme and the expression form a homogeneous entity which very often, for mathematical as well as acoustic reasons, simply cannot be other than it is. Rāgās can therefore never be considered as the invention of some inspired artist: they can at best only be discovered as we discover astronomical or other physical laws that represent some aspect of the universe in which we live—laws which it is not in our power to modify.

Tetrachords and Mode-types (Thāts) (8 and 12)

As we have already seen, Indian, like Greek and Arab music, does, though not very generally nowadays, divide the scale into two tetrachords or groups of four notes, ruled respectively by the "sonant" (vādī) and the "consonant" (samvādī): the lower tetrachord C D E F (Sa Ri Ga Ma) is called pūrvāṅgā (first limb), the higher tetrachord G A B C (Pa Dha Ni Sa) uttarāṅgā (higher limb). This is not an artificial division but corresponds with a physical fact, for, as we have said, there is great similarity of expression between the corresponding notes of the two tetrachords. In many rāgās the division of the two tetrachords is identical.

In analysing each rāgā we shall give, with their ratios, the different intervals that arise between the notes of each tetrachord.

NORTHERN INDIAN MUSIC

Indian music envisages six main types of tetrachord—corresponding with a perfect fourth, and six secondary types corresponding with an augmented fourth. These are obtained in the following way:

If we take the twelve notes of the chromatic harmonic and divide them into lower and upper tetrachords (leaving between them F#, Ma *tivrā*), we see that in each case six different types of tetrachord are possible:



If we combine each of the possible lower tetrachords with each of the possible higher ones, we obtain thirty-six different scales of seven notes. And if, in each of these thirty-six scales, we then replace F (Ma) by F# (Ma *tivrā*), we obtain thirty-six further scales. The total number of theoretically possible basic scales is thus seventy-two. This classification is still used in South India where such scales are called *melās* or *melakartās*.* The theory of them is explained by Pañdit Veṅkaṭā Makhin, the seventeenth century systematizer of South Indian music, who, in the fourth chapter of his *Chaturdāndī Prakāshikā*, claims to have invented this mode of classification, though it is really a more ancient system already spoken of in the *Saṅgītā Sārā* of Vidyāraṇyā (1320–1380).

Since many of these scales are not in use nowadays in Northern music, this classification is usually replaced by a small number of mode-types or *thāts* (usually ten) which correspond with the approximate array, or setting, of the frets on the sitar. This artificial classification—musically inexact, for it neglects the differences of śrutis—merely helps the player to remember the approximate tuning of a mode.

The *Rāgā Vibodhā* says (comm. on 1, 8):

“The particular arrangements of the notes (svarās) into

* The term “*melā*” can however be used for any sort of mode-type.

“A *melā* is a group of sounds from which *rāgās* (modes) will be made manifest.” (*Saṅgītā Pārijāta*).¹⁴²

DEFINITION OF THE RAGAS

common scales (melās) under which modes (rāgās) can be grouped, are spoken of as 'ghāṭas' [or thāṭs]."¹⁴³

These "thāṭs" or mode-types should not be mistaken for the rāgās or modes that bear the same names, for the latter may have more or fewer notes and they correspond with an accurate tuning, whereas the tuning of the mode-types is only approximate.

The ten thāṭs or mode-types are given as follows:

"The first is Kalyāṇī (Kalyāṇā) melā, the second Velāvalī (Bilāval), the third Khammājā, the fourth Bhairavā, the fifth Bhairavī, the sixth Āśāvarī (our Yavanāpuri), the seventh Todī, the eighth Pūrvāvī (our Śrī), the ninth Mārāvā, the tenth Kāfi.

Such are the ten mode-groups (melās) from which rāgās arise." (Quoted in *Śrīmallakṣhyāsaṅgitam* II, 1, 19–21.)¹⁴⁴

They are usually given as follows:

I Kalyāṇā

II Bilāval

III Khammājā

IV Bhairavā

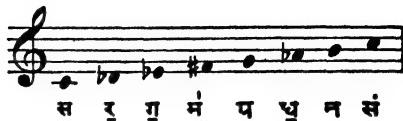
V Bhairavī

NORTHERN INDIAN MUSIC

VI Yavanāpuri (Bhātkaṇde's *Āśāvāri*)



VII Todī



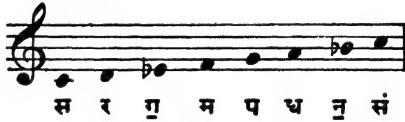
VIII Śhrī



IX Māravā



X Kāfi



The eighth thāṭ, Śhrī, is given by Bhātkaṇde as Pūravī, but since the Pūravī we give here has an A natural (śhuddhā Dha), its name could not be given to a thāṭ containing an A flat (Dha komalā). About the scale of Śhrī there is no divergence of opinion.

The Number of Rāgās

In each of the seventy-two possible basic scales of seven notes we can have: one mode using the seven notes in ascent and in descent; six different modes using the seven notes in ascent and six notes in descent; fifteen different modes using the seven notes in ascent and five notes in descent; six different modes using six notes in ascent and seven notes in descent;

DEFINITION OF THE RAGAS

fifteen different modes using five notes in ascent and seven notes in descent; thirty-six different modes using six notes in ascent and six notes in descent; ninety different modes using six notes in ascent and five notes in descent; ninety different modes using five notes in ascent and six notes in descent; two hundred and twenty-five different modes using five notes in ascent and five notes in descent.

This gives a total of 484 modes in each scale, or 64,848 modes in the seventy-two scales.

If we now consider that there are modes of which the ascending and descending scales are different, modes which combine several scales, etc., we see that the number of possible modes is practically unlimited. It would be difficult in a lifetime to hear them all, even once. Ahobalā speaks of 18,678 modes of seven notes, 31,050 modes of six notes and 17,505 modes of five notes in the Ma grāmā alone.

Śrī Kṛiṣṇānandā Vyāsā in his *Rāgā Kalpadrumā* (Introduction, p. 1) writes:

"For the sake of the 16,108 milkmaids, the Dark Lord, Śrī Kṛiṣṇā, took the same number of shapes. Each of the milkmaids for each of the Kṛiṣṇās sang a different rāgā in a different rhythm, thus giving birth to 16,108 modes. These rāgās and rāgiṇis later became famous in the earthly world."¹⁴⁵

Time of Playing (7)

एवं कालविधि द्वात्रा गायेयः स सुसी भवेत् ॥
रागावेत्सापगानेन रागाणा तिंसको भवेत् ।
यः शुणोति स हारिद्री चायुर्जनयति सर्वदा ॥

"One who sings knowing the proper times remains happy. By singing rāgās at the wrong time (of day) one ill-treats them. Listening to them, one becomes impoverished and sees the length of one's life reduced." (*Saṅg. Mat.* 23-24.)

The cycle of the day corresponds with the cycle of life which also has its dawn, its noon, its evening. Each hour represents a different stage of development and is connected with a certain kind of emotion. This cycle of sounds is ruled by the same mathematical laws as all other cycles. This is why there are natural correspondences between certain hours and the moods evoked by certain musical modes. Played at the proper time, musical modes develop naturally in favourable conditions. Orthodox musicians in India never play a

rāgā at any other than its proper time, for at the wrong hour it could never be developed so perfectly, nor could it so greatly move an audience. The organist who, in the West, played a funeral march at a wedding would, to say the least, appear lacking in taste. In the same way the Indian musician who, disregarding the surroundings and the mood of his hearers, plays a morning mode in the evening appears utterly lacking in sensibility.

There are certain characteristics by which a rāgā shows at what time it should be played. Rāgās to be played between midday and midnight have their sonant (vādī) in the lower tetrachord (pūrvā aṅgā), C to F (Sa to Ma). They are called "Pūrvā rāgās". Rāgās to be played between midnight and midday have their sonant (vādī) in the upper tetrachord (uttarā aṅgā), G to upper C (Pa to upper Sa). They are called "Uttarā rāgās".

Modes that correspond with crucial moments (sunrise, sunset, midday, midnight, solstice, equinox, etc.) often use both F♯ and F¶ (Ma tīvrā and Ma śuddhā).

Besides these, Bhātkhāṇḍe indicates the following time-characteristics, which are very generally followed.

(1) Modes sung at sunrise and sunset are known as "samdhi-prakāśhā (twilight) rāgās". Most of them include Ri and Dha komalā (D and A flat).

(2) Modes with Ga and Ni komalā (E and B flat) usually belong to the middle of the day or night.

(3) Modes with Ri, Ga Dha and Ni śuddhā (D, E, A and B natural) are usually played after twilight (samdhi-prakāśhā)—in the first quarter of morning or night.

(4) Modes sung before twilight—in the last quarter of day or night—insist on the tonic, the fourth and the fifth (Sa Ma and Pa).

The rāgās of evening twilight never omit Ga and Ni (E and B), and the rāgās of morning twilight never omit Ri and Dha (D and A).

These rules are not, however, absolute.

Scale-Types (Greek Genus) (9)

The ancient Greek classification of the scales into three genera, Enharmonic, Chromatic and Diatonic, has a dual meaning. The fundamental one, used by the Pythagoreans,

DEFINITION OF THE RAGAS

referred to the three fundamental divisions of the octave into twenty-two (the Greeks, like the South Indians, made it twenty-four), twelve and seven (or nine).*

Later on, this classification was taken to refer to typical modes built upon such genera.

According to the interpretation of this later aspect of the Greek genera which we find in Arabic writers, a mode is called *diatonic* if each tetrachord has two full tones, *chromatic* if each has an interval of a minor third (three half-tones), *enharmonic* if each has an interval of a major third (four half-tones).

Though this kind of classification is not usually followed by Indian musicians, it is indicated here to facilitate comparison with other systems.

Characteristics and Expression (10 and 11)

Certain rāgās have peculiarities of scale or of tuning that modify their expression.

The expression of a mode is the sum of the expressions of its different notes, each depending upon its individual relation with the tonic. According to the theory of the śrutis, many notes cannot have the same kind of expression and, therefore, in a scale, there are necessarily contrasts. This is why the most intense rāgās have often incomplete scales, for they suppress as far as possible notes that would not support the predominant expression.

Thus a very sad rāgā will leave out the fifth (Pa) because a fifth always expresses sunshine, joy. A very passionate rāgā will have no natural fourth (śuddhā Ma) since that always expresses peace, serenity.

These contrasts between the notes are a further reason why the rāgās considered masculine in ancient music were always pentatonic, for a pentatonic scale gives a much stronger and more coherent expression than an heptatonic scale which necessarily shows contrasts, indecisions, subtleties, and so is more feminine in character.

When sounds are used in the treatment of mental or physical disease, the number of notes must be further reduced to a few sounds constantly heard, so as to create an overwhelming impression in one direction only.

* See p. 72.

Representation of Intervals by Ratios

In practice, so as to be easily understood, for each interval we shall use the nearest simple ratio sufficiently accurate to represent it. We shall always represent a major tone by $9/8$, a minor tone by $10/9$, a major half-tone by $16/15$, a limma by $256/243$, a minor half-tone by $25/24$, and so on, though these figures may sometimes be slightly inaccurate. For example: though the major tone is the sum of a major half-tone and a limma we shall write it:

$16/15 \times 256/243 = 9/8$, which is incorrect, for the major half-tone would then become the "apotome" $\frac{2187}{2048}$; or, if we keep the major half-tone as $16/15$, the limma would be $135/128$, because we have either $\frac{2187}{2048} \times \frac{256}{243} = \frac{9}{8}$ or $\frac{16}{15} \times \frac{135}{128} = \frac{9}{8}$.

Similarly, the minor tone is equal to 2 limmas, and we therefore represent it by $\frac{256}{243} \times \frac{256}{243} = \frac{10}{9}$ — incorrect, for $\frac{256}{243} \times \frac{2430}{2304} = \frac{10}{9}$. But since, actually, $\frac{256}{243} = 22.63$ sav.*., $\frac{135}{128} = 23.12$ sav. and $\frac{2430}{2304} = 23.13$ sav. are practically equivalent;

and since, from the point of view of expression, the difference is non-existent, being in the first case half a savart and in the second $1/100$ th of a savart (that is to say, in one case $1/11$ th of a comma or $1/100$ th of a tone, and, in the other case, $1/10,000$ th of a tone), and since, again, the simple ratio represents the interval quite clearly, it will be easy for the student who so desires to find out for himself the exact ratios.

Śhrutis (Analysis of Expression) (13)

As we have already said, the expression of a mode is the sum of the expressions of its different notes, defined by their relation with the tonic. In each rāgā, each of the different

* See first footnote to page 47.

DEFINITION OF THE RAGAS

notes has a definite expression. This is very evident if their pitch is accurate and without variation.

The expressions given in our notation for each note of each rāgā have been compiled experimentally and verified over and over again, players and hearers being always in perfect agreement as to the meaning of the notes.

There may, however, remain some slight inaccuracies in the accidental śrūtis used for particular notes in certain melodic figures. There may also be different schools for the *expressive* interpretation of the rāgās. Only long practice and experiment by different musicians would allow us to correct and perfect every detail in the use of the accidental śrūtis appearing in each rāgā.

Theme (Rūpā) (14)

For each rāgā there are a few very typical groups of notes from which it can at once be recognized. These form the main theme (*rūpā*).

Outline (15)

It is impossible to write down the ever-changing development of a rāgā. We have to limit ourselves to noting in its simplest form, the first part of an average “exposition of the theme” (*ālāpā*). From this, however, the student should be able to perceive the complete form of the rāgā and so, following the rules, proceed to the variations.

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3. पुत्रानभ्यपयामास योगे चापि तत्त्वतः ।
शारिरिकं वेद वास्त्वं च कोशलं दर्शितं तत्त्वम् ॥
4. भरतानाम वंशोऽप्य भविष्यत्वं प्रकीर्तितम् ।
कोशलादिपरे (भर) तर्त्वा वास्त्वप्रायिदपशुर्प्रिणि (दशि) नैः॥
5. सदागिरः विशा ब्रह्मा भरतः इत्ययो मूनिः ।
यत्तेषो यापिष्ठो हुर्गामिकः शार्दूलवृष्टिलो ॥ 15
विशालिको दर्शित्वं ब्रह्मलोक्यतारथत्वा ।
वायुर्विश्वास्य रंभाज्ञनुगो नामरतुहृष्टः ॥ 16
आंतेषो मात्रगुणो रावणो विदितवरः ।
स्तातिर्गुणो विदुरागः सेत्रामध्राराहः ॥ 17
कृष्णो नान्यभूपालो भोवृद्धलोभत्वस्या ।
परमदीप्तं च सोमेषो जगदेवतामीर्पतः ॥ 18
व्याख्यातामारो भारतीयो लोकलोद्योद्युक्तः ।
भद्रपिनवृगुप्तः भीषमकीर्तिप्रेपरः ॥ 19
अन्ये च वहः पूर्वे ये संगीतविशारदाः ।
6. संगीतविशारद्ये एवुचा विरोधाः सन्त्वेष्य लक्ष्येषु च काशेषु ।
7. अनादातो इतरौचैव स नादो द्विषयो मतः ।
यत्रोपयोस्त्वयोर्विष्टेनादातोऽपि निरप्यते ॥ 4
आकाशांशेषो नादो यः सोऽनादत्वंश्चितः ।
तत्पित्रानादते नादे विरामं वाय्यं देवताः ॥ 5
शामिनोऽपि वदात्मानस्तदानादत्वंश्चितः ।
मनो निरिष्य पंचान्ति मुक्ति वयत्वानसाः ॥ 6
8. आदातो रजाकः वोक्तोऽनादातो वृक्षिकायकः ।
9. स च इतिविद्विनवत्वाच मनोरजाको दृणाश् ।
10. नकारं वाल्मीकानं इकारमनलं गिरुः ।
जातः प्राणानिसंयोगात्मेन नादोऽभिधीयते ॥
(1. प्राणामनदो)
11. सोऽन्धाहतः यज्ञविषयो नादस्तु परिकीर्तिः ।
नत्वामुमवर्गाण्यो लोहातीर्जास्या ॥
(1. नत्वाच वायुवर्गभ्यां)
12. रंजकः स्वरसंदर्भे गीतमित्यभिधीयते ।
गीतर्वं गानमित्यस्य भेदव्यवृद्धीरितम् ॥
13. अनादिसंग्रहयं शहूषेषः संग्रहयते ।
निषत्तं भेदस्तो द्वृत्स्तापर्वं जग्युषाः ॥
(1. ग्रन्थस्ते)
14. मार्गं अन्नेष्टे
15. यो वार्गिते विरिच्छ्या यैः मधुको भरतादिभिः ॥
देवत्य पूरतः शाम्बोर्नियताभ्युपदेः ।
(1 आ)
16. यत्पु वामेवकारेण रजितं लक्षणान्वितम् ।
देवी रामादितु शोकं तदानं जनरक्षणम् ॥
17. देवे देवे जनानो यदुच्या इत्यरंत्रम् ।
गीतं च नादनं त्रयं तदेवोत्यभिधीयते ॥
(1 न) (2 च)
18. देवे देवे वृषभोऽप्तो जनिदेशीति सहितः ।
19. आकाशं भविना सर्वं जगत् स्यावरज्ञप्रम् ।
उत्पन्नु द्विषयः शोको व्यक्ताम्यकविषयागतः ॥
बलांप्रजाप्तनाद व्यक्तो देशीमुखमुपागतः ॥
20. वहः शर्वेषां स्वराणामायाः तस्यावशानं ब्रुत्यः ।
21. दिविको हि द्वेष्यत्या यस्यां कस्यामिति भूतौ च इनं
स्वायेषत्प्रेषया च भूतिनियवेनान्यान्तरान्तरान्योपये-
दित्पुक्तान् ॥
22. रामग्रनको जनिः स्वर इति ।
23. राजनीताविति 'पातोः दशरथूर्कपत्य च ।
स्वर्यं योः राजते यस्यामासोप स्वरः ॥
(1. दीर्घवयः . Simhabhūpiñilā, Saṅg Ratan 3 24)
[2 वि] [3 तस्यात्पर इति id.]
24. वर्त्मादयः स्वराः सत् व्यञ्जने भूतिभिः सदा ।
अनकारार्दिता वहत् भद्रोपेन वदादयः ॥
25. [अवणात् भूतयो मनः]
भूतवन्तवत्पाती यः राज्ञः उत्तराणनात्पकः ।
सतते रज्यते ओहृत्वं स स्वर उपर्यते ॥
[1. लिङ्गोऽ]
26. भूतवन्तरभावितं वस्याकुरुत्तमात्पकः ।
लिङ्गय रंभवभासी स्वर इत्यभिधीयते ॥
27. भूतिभः स्तुः स्वराः वद्वर्जन्मगाधारप्रथमाः ।
पवत्तो वेतत्वापि निषाद इति सत् ते ॥ 167
(1. भूतिभवः) (2. वेतत्वाच) (3 यः)
28. तेषां संशाः स रि ग य ष ष च नीत्परा यताः ॥ 168
29. आत्मा च स-स्वरः शोकः शिरो रि-स्वर उच्चये ।
इती गोपात्मेषोक्ती वशः स्वाम्बन्धवदः ॥

NORTHERN INDIAN MUSIC

३०. ते स्वराः सर्वं विषये सहस्राभिरुत्तमः ।
पादो निशाद् एव स्त्रात् सहस्रा मूर्दना वरेत् ॥
३१. पद्मं पदति वृत्ते मूर्दने चातके वरेत् ।
अना वर्णित (१ वि) गोपार्ण लोको इष्टवि प्रथमम् ॥
पुष्पसापारणे काले कोलिलः पद्मं वरेत् ।
वाहृद्वाले तु समाते वैतं द्वारो वरेत् ॥
सर्वतो च तथा देवि ! निशाद् वदते गतः ।
३२. वलोपिरामाः पूरुषस्ती रक्तेविस्तोन्तरैः ।
पद्मसंवादिनीः केका द्विवा भित्ताः शिलाइदिवः ॥
३३. भृत्यूर्ध्वं वेत् पद्मस्य निशादसंश्रेष्ठेयाऽथ । (तदा)
स काळशीष्यमस्य गान्धारसन्नतः त्वरः ॥
३४. निशादः काळलीसंगो द्विभृत्युक्तं रणादेवते ।
गान्धारसतादेव स्पादनस्त्रियसंस्थितः ॥
अनंशनात् भेदेन स्त्रात्वं नोपयते तयोः ।
अतो निशादगान्धारवेतावार्यं 'मूर्दन्ते' ॥
(१. त्रै)
३५. भूयते इति भूतिः ।
३६. भू भूयते चास्य पातोः किञ्चत्प्रसादुभूयतः ।
भूतिशब्दः प्रसादोऽयं लाघ्वं भूतिशापनः ॥
३७. हारिनिति वेष्टिद्वादादरन्ति भूतीः भूतिशाननिवारदासाः ।
पद्महिमाः लक्ष्मीविदासामान्तर्यमेव व्रतिशादयन्ति ॥
३८. ते हु हारिनिर्दा न करेते परिस्कुटाः ।
हारया दर्शयितुं तस्याद्वौलालात् तजिदर्शनम् ॥
३९. पञ्चमस्य भूत्युक्तं राष्ट्रकार्याद्याः पार्वतादावतावाऽ
चरन्तरं च त्वराणां'भूतिरिति ।
(१. तात्र) (२. वामाण)
४०. उद्वैस्तरो जनी रसो विदेयो वाततो तुः ।
गर्भरो यन्न'जीनत्तु इयोऽसी पितृतो अनिः ॥
दिवनप्य तुषुकारात् युः कफजो जानिः ।
प्रयाणो गुणसंयुक्तो विदेयः संप्रितातः ॥
(१. यन् (नी ? शी) लाप्य तात्परः)
४१. दीप्ताऽध्यता च कला मूर्दन्तेरिति जातयः ।
भूतीनां पञ्च तासां च वर्णेत्वे व्यवस्थितिः ॥
४२. सीमा कुमुदीयम्भावाक्षनोपत्यस्तु पद्मगाः ।
द्वापती रंजनी च रक्तिः वर्षये वित्ताः ॥
रीढ़ी क्रोणा च गायत्रे वर्जिताऽयं प्रसरिती ।
शीतिष्ठ मार्जनीरेताः भूतयो मध्याभिताः ॥
शिती रक्ता सन्धीयम्भावाक्षपिती वैष्ण वर्षये ।
मदनी रोमिणी रघ्येतेता वैतवंश्रेष्ठाः ॥
उत्ता च लोभिणीरिति दे निशादे वसतः भूती ।
४३. सा च मूर्दना द्विविषा सहस्ररूप्तना द्वादशस्त्रमूर्दनेति ।
४४. स रिं ग म व च नीति पद्मग्रामस्य मूर्दना ।
म ए च निं स रिं ग मध्यमग्रामस्तुना ॥
ए च निं स रिं ग भेति गान्धारामूर्दना ।
४५. अथ ग्रामालयः भोक्ता: स्वरसन्नोद्दिपणः ।
पद्मग्रामध्यमग्रामसंज्ञाभिस्ते समन्विताः ॥ ११७
मूर्दनामार्थभूतात्ते पद्मग्रामस्तिष्ठामः ।
रागा ग्रामद्वयालाभ्या पद्मग्रामोद्वाप्ति ॥ ११८.
४६. गान्धारामध्यमग्रामवयवोभनकी प्रती ।
गान्धारामध्यमग्रामी शदि ग्रान्त्या वक्तिवती ॥
तर्हि ताङ्गभूतं भोक्तमर्पणीकारमात्रः ।
४७. देवीरागात् सकलाः पद्मग्रामसद्वद्यवाः ।
४८. मध्यस्तानस्यपद्मेन मूर्दनाऽऽरन्त्येते क्रमात् ।
४९. ननु कर्यं पद्मग्रामपद्मराम्या ग्रामव्यपदेष्ये उप्यते-
भसापाराणलेन ताभ्यां ग्रामव्यपदेष्ये ।
भसापाराणलेन च देवकुलोद्वचलेन ।
५०. स्वरोऽग्रियं श्रुति याति तीव्रसंहो ग्रामात्यसी ।
स्वरोऽग्रियं भूती याति तदा तीव्रतरो भवेत् ॥
स्वरोऽग्रियमूर्दनीयाति तर्हि तीव्रतयो भवेत् ।
चतुरः भ्रुतयो यरियक्षिकाः पद्मर्यादा स्वरः ॥
भूतिनीव्रियास्त्वा च मार्मोतीव्रियं भूर्दन्त्याः ।
स्वरः पशाभित्ताशर्वेत्कोलादिभिरितिः ॥
एकं भूतिपरित्यागात् स्वरः कोलालंकृतः ।
भूतिपरित्यागात्युत्तेन भएत्येते ॥
५१. अव्यवारे त्वसौ त्रेषां इदि वद्वाऽग्रियीयते ।
कर्त्ते पद्ये वृष्टिं तारो इतिग्रामोऽस्त्रोऽसः ॥
५२. हृदि बन्द्रो गले पद्ये वृष्टिं तार इति क्रमात् ॥
५३. बन्द्रो हृदि स्वितः कर्त्ते मध्यतारम् मूर्दनेति ।
रिणुणः किं समासेन पूर्वस्यादुत्पत्तेष्वरः ॥
५४. तथा कला सास्त्राद्वारयोर्धेयाः । वीभत्सप्रयानक्षयो-
विक्षितिः । भीरोद्वादतेतु च द्रुतः ।
५५. तक्तोऽशङ्कः भोक्तो तक्तोऽपार्वती स्थापतः ।
शिवाक्षिकसामोगात्मात् इत्यनिषिद्यते ॥
शिवतत्त्वात्परम् पुर्ये यवस्त्वं द्वाक्तुष्टिकदम् ।
ततः वायात्मकं तालं योगिनामविभित्तात् ॥
(१. रस्त्रहरः, Sh tat Ratn) (2. एः id.)
- ५५ a. सवोऽप्तीऽनामातव श्राद्धाले विषा वतः ॥
गीतादिं सक्तालत्तु सक्तालेः सक्तालः ।
सोऽप्तवालितीतः स्वातो गीतादौ वर्षते ॥
जनागतः वायात्मकः सौपरितालिकः ।
५६. गान्धिशोभते दर्शः स चतुर्थं निरूपितः ।
स्वाम्पारालापरोऽी च संचारीत्यव लालालः ॥
५७. एकस्त्ररा एव गीतिः स्वाविष्टाऽप्तिविदते ।
५८. दिवस्त्रा दिवस्त्रा विषा: स्वादेहैकल्पः द्वरस्त्र वः ।
स्वाती वर्णः स विषेयः पद्माल्लैः वायको ॥
दृष्टस्त्रिमित्यलालै वर्णः स्वाती वरिष्टीतिः ।
(१. ग्रयोगस्त्र वैकल्पस्य, स्वादेहैकल्प, Sh. tat. Ratn.,
Sahg. Ratn) (२. वर्णस्य id.) (३. वः)

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एवयादपन्योरेकस्तरस्ये स्यायिर्लग्नः ॥
- 60 वरस्तरं स्वराणां तत्त्वात् तानाः ।
- 61 तानो हिंसा शुद्धतानः कृद्धतान इति क्रात् ।
एकेकरणयात्रायिर्वर्चकिसंप्रादकस्तु यः ॥
स शुद्धतान इयुक्तं कृद्धतानः स उच्चते ।
यत्तु रात्राइयहृषीः सापास्तथाया स्थितः ॥
प्रयक्षारास्तु प्राप्तीनाः कृसाचिदपि कारणात् ।
प्रयोजने लहृयामि न एवन्ति परिकृष्टम् ॥
कृतुर्लग्नीति संलया मुख्यान् संसरमया ।
वस्तारो शूद्रानायाः स्त्राकादिवद्विद्वित्तम् ॥
- 62 विस्तारं येन रागः स तानः कृत्यते वृष्टे ।
षुद्धद्विभेदेन द्विविग्नाने सुलक्षिताः ॥
षुद्धतानवरस्य तत्त्वस्ये येव परिकृष्टम् ।
इति तेषां सप्तास्त्वानां यन्मेत्र निष्प्रयोजनम् ॥
- 63 पूर्णः पञ्चतात्त्वाणि चनारिंशयुतानि तु ।
एकेकर्यां शूद्रानायां कृद्धतानाः सह क्रैः ॥
- 64 पृथ्व्याशान्वृद्धनामाः पूर्णः कृद्धत्तु योजिताः ।
क्षम्यां सहस्राणि द्विप्रार्थीं शते तथा ॥
चनारिंशतु संस्त्वानाः ॥ ॥ ॥
- 65 क्रमात्प्रवाणां सप्तानामारोहाशावाहेत्तम् ।
शूद्रनेत्रवृष्टये ग्रामद्वये तः सह सम च ॥
- 66 द्वादशावस्त्रपत्रा हातव्या शूद्रान् वृष्टे ।
आतिपाचादिलिंपर्यंता तारन्दादिसिद्धये ॥
- 67 तत्र सप्तस्त्रवृद्धना चृत्यर्थाणि पूर्णा चापाचा शौहृतिः-
सापाराणा चेति । तत्र सप्ताभिः स्वरैर्या गीयते सा पूर्णा ।
पर्वतः स्वरैर्या गीयते सा चापाचा, पञ्चाभिः स्वरैर्या
गीयते सा आद्वितिः, कारकवैरतरं स्वरैर्या गीयते सा
सापाराणा ।
- 68 विशिष्टं शर्णसन्दर्भप्रयत्नाकारं प्रवक्षते ।
- 69 बन्द्रहस्तेन वस्त्राच्चनिरन्तर्याने,
- 70 व्रसचादिः व्रसचानान् व्रसचायन्तस्तिकाः ।
ततः व्रसचाच्छः स्वात् पूर्व व्रप्रयत्नेतिः ॥
व्रसरेऽप्य व्रसादः स्वात् सर्वे स्यायिन् स्थिताः ।
(१. व्रसारथ) (२ अ)
- 71 व्रसदारभ्यं ये सारोर्लग्नं ग्रामद्वये यावद्वये प्रसकादि ।
सा री गा या या नी सा इति व्रसचान्ति ।
- 72 तारादारभ्यारोहवैष्णवं व्रसचानानः । यवा-सा नी ग्रा
या या री गा या या नी सा इति व्रसचान्ति ।
- 73 यत्रायन्त्योः व्रसचाच्छः क्षेच च तारः स व्रसचायनानः ।
यया-सा री गा या या या नी सा नी ग्रा या या या गा
री सा इति व्रसचायनानः ।
- 74 यत्र मन्त्रो श्वरे कागन्तयोध वारः स व्रसचायनः ।
यवा-सा नी ग्रा या या नी सा री गा या या या गा
नी सा इति व्रसचायनः ।
- 75 द्वादशारोहवैष्णवान्ता अस्त्राराः व्रक्षिताः ।
अवरोहकमारेणे द्वादशाप्यस्त्रोरैषे ॥
- 76 अनेन सप्तालंकारा गीतैर्वेषदर्शिताः ।
तारप्रद्वयसंब्रह्म यद्वारप्रसादः ॥
आवर्तकः संवदाने विषुदाप्युलोलकः ।
उल्लासितरवेति ॥ ॥
- 77 स्वप्रतिस्वानसंभूता ज्ञाया शून्यनगाम्रयाम् ।
स्वरा यद्य गपयेद् गीते गपकाऽसौ निरूपितः ॥
- 78 गपकं (१ का १) वरिश वरलाङ्गपि कृत्यने ।
- 79 स्वरस्य कम्प्यो गपकः शोत्रविसमुखावः ।
तत्प येदास्तु तिरियः शूरितः विष्यतस्तथा ॥
सीन आन्दोलितालितिविष्यकुलावताः ।
उल्लासितः ज्ञातित्वं शूरिफ्को शूद्रितस्तथा ॥
नायितो गिभिता प्रवः श्वेते परिकीर्तिः ।
- 80 शूरितः कम्पितो लीनस्तिर्तिप्रशाहस्तथा ।
आन्दोलितालितिविष्यक गपकः सह शीर्तिः ॥
- 81 लग्निषुद्धमरुधान-कम्पानुकृतिसुन्दरः ।
दुर्गुरुषानेगेन तिरियः परिकीर्तिः ॥
- 82 शूद्रेणो यत्र येनेन ऋग्मन्त्यावत्सपदन ।
तपायुलितिरु नाम्ना गम्भे गीतवेदितः ॥
- 83 वेगे द्रुतवीर्यांसमिते शूरितो ग्रहः ।
- 84 आरोहिकमतो यत्र शूरनित भ्रवदः क्रापात् ।
शूद्रुद्वयाय वेगेन तमादृः शूरिते शूषाः ॥
- 85 द्रुतर्वयानवेगेन कम्पितं गपकं विदुः ।
- 86 स्वरकम्प्यो येदेद् यत्र द्रुतिद्वयावेगमः ।
कम्पितो नाम गपकः स विहेयो यनीचिभिः ॥
- 87 लीनद्रुतस्तु वेगेन
- 88 द्रुतमनेन वसानः स्वरो यत्र विलोपते ।
स्वरान्द्रादिवेष्ट च भवेत्स्वान्महाकः ॥
- 89 आन्दोलितो लघुवेगातः
- 90 इविषुद्धप्रवेगाते येन लयेन गीयते द्रुतेन प्रवयेन विल-
भित्तेन वा तत्प्रवाणेण स्वरस्य कम्प आन्दोलितालितो
गपकः ।
- 91 आन्दोलने येदेद् यत्र द्वादशाणां लघुवानातः ।
आन्दोलितास्तं गम्भे गीतावासं व्रचक्षते ॥
- 92 ... लालितस्तु लघुवानेन कम्पन्
- 93 लालितिविष्यवक्त्वयुक्तवेषाद्वेति ।
- 94 इवस्तो विलेय स्याद् ग्रन्तिः इत्यत्तोवदः ।
- 95 शूलघुटप्रसंभूते शूद्रिणो गपकां भवेद् ।
- 96 इत्यवग्युक्तारगम्भीरो गुणितो भवेद् ।
- 97 निपित्तस्तु त्रिषु स्त्रानेष्वविष्यान्तप्रवापः ।
- 98 स्वानकव्रयसंस्पर्शां तत्प्रवानगुणर्वतः ।
अविष्यान्तस्तरपेततिविष्यकापः स्वतः ॥
- 99 स्वरयविष्यमात्म्यं निहतस्वाद्वयो वदः ।

NORTHERN INDIAN MUSIC

- 100 अधियं पुरतः दिवर्त स्वरमाहत्य शीघ्रं सहस्रहा
निहृत आहत उच्चते ।
101. विरयेकरित्वं सरे पद्मादिश्वे दिवत्वा तदीयतारपत्रिन-
वद् (स्) हा कलामेको च दिवत्वा यथा त्रुनरपि समा-
सा मन्द्रया गम्यते स विनुः ।
102. उत्त्वासितः स तु शोको यः स्वरानुपरोचारान् ।
कलाप्रच्छेत् —
103. यस्त्वरोत्तरं क्रमात्स्वरानारोहति स उड्डासित इत्युच्चते ।
104. स्वराणा नवनादुको नामितो ध्वनिवेदिभिः ।
105. स्वराणा नवनं मन्द्रस्वानं उत्त्वारात्मरोहणं तथुके
नामित इत्युच्चते ।
106. एककलान्तरं स्थूपा विन्दोरेष विपर्योग्यारात्मकाहौ
विनिहृतत्वाद्वा निवृत्यास्यः ।
107. एतेषां विभ्राणात्मिभ्रस्तस्य स्मृभूर्यो भिदाः ॥
108. तिरिपान्त्वोलितो लीनकर्मितः रूप्यिताहतः ॥
तिरिपान्त्वुरितो लीनकर्मितः स्फुरिताहतः ॥
लीनकर्मितलीनकर्मितविलोक्यमुक्तिरूप्यितः ॥
नामितान्देवलितवर्तिर्लितानामित-कर्मितः ॥
आन्देलित-कावितरसम्बूद्धतानितानामितः ॥
तिरिपान्त्वोलितवर्तिर्लितमुक्तुरूप्यितः ॥
त्रिपिचलीनमुक्तुरूप्यितान्देलितः पतः ॥
109. गीतादी द्व्यापिनो यस्तु स ग्रावस्वर उच्चते ।
न्यासस्वरस्तु विहेयो यस्तु गीतसमाप्तः ॥
बहुतत्वं प्रयोगेतु स चोरावस्वर उच्चते ।
110. ग्रास्तु स वृजातीनामंशवद् परि'कीर्तिः ।
यदमृतोऽभेद गेयः' सांख्योऽप्रविकरणकः' ॥
(1. वंश एव हि) (2. अं) (3. गानं) (3. वितः)
111. यस्मिन्देव क्रियमाणे रागाविष्ट्यक्तिर्वति सोऽशः ।
112. अंशवद्वस्त्वसावेद लीनस्वर इति इत्यतः ।
113. पद्मः सर्वत्र रागे च ग्राः;
114. प्रयोगे बहुतः स स्याद्वायंशो योग्यतावशाद् ।
115. यथा बहुयोगतः सोऽव्यंशः;
116. रागश्च यस्मिन्वसति यस्माद्वैष यवर्ते ।
नेता च तारमन्द्राणां योऽस्त्वर्योक्तुपाप्यते ॥
ग्रावाप्न्यासाविन्याससन्वासाविन्यासयोगतः ॥
अनुहृतश्च यश्चेद सोऽशः स्याद्वालभातः ॥
117. रञ्जातोर्यज्ञपत्ययेन निष्ठो रागावदः ।
118. रञ्जः स्वरसंदर्भः स रागः कवितो तुष्टः ।
119. रञ्जनित तद्वीना भ्रवित
120. योऽसं व्यनिविशेषस्तु स्वरवर्तिर्विपूषितः ।
रञ्जको जनविचानां स रागः कवितो तुष्टः ॥
121. पद्मर्पभी तथा हेषो वीररोद्धादुतेषु च ।
122. मुहुररात्म्यकलारौद्रवीरभयानकाः ।
शीभसाद्वृत्तशान्ताख्या नव नाव्ये रसाः स्वतः ॥
तत्र हास्यमृकारयोर्मध्यमपवामी । वीररोद्धादुतेषु पद्मज-
आयो । कल्पे निवाद्वाक्यारौ । शीभसभयानकयोर्वै-
तम् । शान्ते यथाप्यम् ।
123. कर्वति इति कृष्णः
124. पद्मप्रवप्यः पद्म शूष्मः शुक्रर्णकः' ।
कनकाभृतु गाम्यारो मध्यः कृदसचिन्पः' ॥
पञ्चमतु भवेत् कृष्णः यीत्वर्णेतु षेषाः' ।
निवाद सर्ववलोऽप्यविज्ञेयः' स्वर्वर्णकः' ॥
(1. शुक्रिङ्गारः) (2. कृदसचिन्पः) (3. पीतकः षेषां विदुः)
(4. सर्ववर्णः स्वादित्येनां) (5. ताः)
125. आदायुद्धाने येन स तानोद्ग्राहकसङ्कः ।
(1. आद्यन्तयोग्यानितस्ताने यत्र वाचायते ॥
स्थायी तानः स विवेयो लक्ष्यलालयोक्तव्यैः ।
स चारी तु स विज्ञेयः स्थाय्यारोहक्तिविभिरः ॥
यत्र रागस्य विभ्रान्तिः समाप्तियोक्तव्यो हि सः ।)
126. गीर्वाणाम्यदेवीयमापानामित्यरामित्यः ।
द्वितुर्वाक्यपत्यवर्णं नरनारीकाम्यभृत्य ॥
शृङ्गरसभावाय रागात्मापदात्माकम् ।
पादान्नानुग्राम्युक्तं पादान्यम् च वा ॥
प्रतिवादं यत्र बद्धोवं पादवत्तुष्ट्यम् ।
उद्ग्राहाभुवकापोगोत्तम भूत्वपदं स्तरम् ॥
127. औदायः पञ्चायः शोकः स्वरैः पद्मित्यु शादः ।
संपूर्णः सप्तमिः शोको रागात्मित्याप्ता ॥
or (सम्पूर्णः सप्तमिहेतुं एव रागस्त्रिंश वरः) ।
128. ईं यथो वापि चत्वारः स्युनाना रञ्जकस्तराः ।
पञ्चार्थं रागः
129. शुद्धो रञ्जकारी रवेन च्छायालगः पराब्रह्मः ।
संकीर्णस्तभयया यत्कृतिभूयापतेरेवम् ॥
130. औदायशब्दस्य ध्युतित्ययो-उदायः नक्षत्राणि
वानित गव्यन्ति यस्मिन् इति उदर्वं योग्यै ।
तद्व भूतेषु पञ्चमै । तेन पञ्च संलयं प्रतीयन्ते ।
औदायी संलया पञ्च स्वरस्त्रुपा इत्यर्थे विषये वस्त्र
131. संग्रामपलावद्यविरहा गुणकीर्तनम् ।
पाद्येन यगातव्यं लक्षणे भरिते तथा ॥
ध्यायिनाये शुद्धानामे भवयोक्तविनाशने ।
दुःस्मिन्ते वैष्णवसन्ताये महूलाचारसंयुते ॥
औदायेन यगातव्यं लाये च ग्रावपोशणे ।
132. शुतिग्राहस्वरादिसद्यूहाज्ञायन्ते जातयः
ज्ञातो जातय इस्युच्यन्ते ।
133. ऐरोगो मालसोऽप्य॑ हिन्दोको दीपकस्तथा ।
शीरागो मेष्यागश्च यदेते' पुष्टाः स्वतः ॥
(1. ऐरोगोऽक्षिगुरवैर, Sh. tat. Ratn.) (2. यदेते, id)

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- 136 यदृ वादिस्तरेण रागस्य रागत्वं जनितं
हविर्वाकत्वं नाम संवादित्यम् ।
- 137 द्वादशा वाही भ्रुतयोऽवास्थौ संवादिनौ तौ सः ।
- 138 भ्रुतयोऽही द्वादशा वा भवन्ति सप्ते योः स्वरयोः ।
संवादिनौ तु कथितो परस्परं तौ निषादगान्धारौ
रिप्योः ॥
139. न वादी न च संवादी न विवादिषि यः स्वरः ।
सोऽनुवादी विहेयः स्वस्याद्यथा विचलणैः ॥
- 140 शक्तिविच्छेदत्तेतत्वं यस्मिन् रागे तु यस्य तु ।
स्वादगस्यस्तरैस्तस्य विवादित्वं भवेद् भ्रुत् ॥
.... विवादी शब्दवह भवेत् ।
- 141 विवादी तु मदा न्यायः इविचानकियात्मकः ॥
- 142 मेलः स्वरमधूः स्पादागच्छभवाकियात् ।
- 143 वेला विलन्ति वर्णाभवन्ति
रागा वेचिति तदाभ्यभूताः स्वरसंस्थानविवेषाः
पा (षा) देति भाषायाम् ॥
- 144 कर्त्याण्येतत्कस्यायो विलावल्या द्वितीयः ।
लंगाजातापस्तीयः स्पादृ वैवेल्य चतुर्थः ॥
पंचमो वैत्तीनामा वहुस्त्रिवासवर्तीरितः ।
सप्तमस्त्रोदिकाहोऽपि दूर्घासिपोऽष्टमः स्वनः ॥
नवमो वारवाभिष्ठो दशमः काफिसंहितः ।
इत्येते दशमेतत्ते रागोत्तादनहेतवः ॥
- 145 सोले सहस्र एकशत आठ गोरी एनने ही श्रीकृष्ण रूप परे
एक एक गोरी एक एक श्रीकृष्ण गति एक एक राग
एक एक ताल सोले सहस्र एकशत आठ रागारागिणी
पकट किये, ताते एड रागारागिणी भूलोकमें ग्रसिद्ध हुये ॥

